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ARID LAND ECOLOGY RESEARCH

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April 1968

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ARID LAND ECOLOGY RESEARCH^{1/}
1967 ANNUAL PROGRESS REPORT

by

H. G. Fisser and G. L. Noller^{2/}Table of Contents

- Section I - 5 pages
Soil moisture and temperature studies - Smilo, Granite
Mountain and Cumberland Exclosures
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Exclosure studies (production, cover and precipitation
phase)

Frontspiece

The photographs of the Cumberland #1 Exclosure depict changes which usually occur following sagebrush control. The exclosure is located some 25 miles south of Kemmerer, Wyoming in an alkaline bottomland. The most abundant shrubs in the area were greasewood, spiny horsebrush, gardner saltbush, and small amounts of big sagebrush. Following shrub control by application of 2-4,D in 1963, forage production of the nonsprayed sites has remained higher than on the sprayed sites due, primarily, to the loss of gardner saltbush under the shrub control treatment. Native perennial grasses have been becoming increasingly more abundant and productive in the sprayed areas so that production is nearly the same as on the nonsprayed sites. The upper picture portrays the result of shrub control--a tremendous increase in grass cover and production. The lower picture shows the character of the native shrub type. Shrub control of this vegetation type may not necessarily mean an increase in forage production because of the productive potential of palatable native shrubs. In areas of extensive shrub stands an operator may find it advisable, however, to control shrubs in order to increase grass production and provide a more varied diet for grazing animals.

^{1/}Published with approval of the Director, Wyoming Agricultural Experiment Station, as Scientific Report No. 132.

^{2/}Associate Professor of Range Management and Graduate Research Assistant, Range Management Section, University of Wyoming, Laramie, respectively.

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S E C T I O N I

SOIL MOISTURE AND TEMPERATURE STUDIES 1967

Introduction

Studies to evaluate soil moisture and temperature characteristics as influenced by sagebrush control and livestock grazing were initiated in 1963. Soil moisture was determined by use of a neutron scattering meter. Permanent metal access tubes, 2" in diameter, were set into the ground to a depth of 5'. The neutron probe measures the amount of water in the soil through an area of about 4' in diameter. Soil temperatures were measured with thermister probes placed at 8, 15, and 22" below the surface. Lead cables from the buried sensitive elements were connected to a meter for an instantaneous reading of temperature. Surface temperatures were read with a portable probe. At the Smilo and Granite Mountain Exclosures two access tubes were located in each of the following treatments at each study site: Inside Sagebrush Sprayed, Inside Sagebrush Non-sprayed, Outside Sagebrush Sprayed and Outside Sagebrush Non-sprayed. At the Cumberland #1 and Cumberland #4 Exclosures three access tubes were placed in each of the two treatments inside the exclosures: Sagebrush Sprayed and Sagebrush Non-sprayed.

1967 Results

Soil moisture, temperature and precipitation data were recorded on nine dates at the Granite Mountain and Smilo Exclosures during 1967. These soil moisture and precipitation data are presented in Tables 1 and 2. At the Cumberland #1 and Cumberland #3 Exclosures soil moisture measurements were obtained on eight dates during the year. These data are presented in Tables 3 and 4. Soil temperature data for 1966 and 1967 are presented in Table 5.

Soil moisture values reflect the abundant rainfall during spring and early summer of 1967 in that the average annual mean moisture levels were considerably greater than during previous years. The moisture levels during the latter summer and fall periods were low; apparently a combined result of limited precipitation during August and September and increased capability for moisture utilization following the very favorable growth conditions which existed during spring and early summer.

The low soil temperatures during May, June and July of 1967 reflect the influence of high soil moisture content during that period. At the 15" and 22" depths, temperatures remained low during the latter part of the year although air temperatures were high and precipitation minimal. With increasing depth, soil temperature variation is less subject to short term weather changes. To attain the greatest temperatures at the 15" and 22" depths weather conditions must be warm and dry during the entire growing season. A short period of extremely warm and dry weather during mid-summer will not cause a rapid temperature increase of soils below 21" to 15".

SOIL SURVEY AND INVESTIGATION

1957

Introduction

Reference is made to the soil survey and investigation conducted in the area of the ... (text is mirrored and illegible)

1.1. Survey

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Table 1. Granite Mountain Exclosure. Precipitation (in inches) and soil moisture readings (inches of moisture per 12" of soil) as affected by sagebrush control and grazing-1967 (each figure is an average of readings in two access tubes).

Outside										
<u>Spray</u>	<u>Mar. 23</u>	<u>Apr. 29</u>	<u>May 12</u>	<u>June 9</u>	<u>June 21</u>	<u>July 17</u>	<u>Aug. 9</u>	<u>Sept. 1</u>	<u>Oct. 14</u>	<u>Mean</u>
6"	3.35	3.08	3.36	2.90	2.50	2.25	1.90	1.69	1.99	2.56
12"	2.81	3.09	3.28	3.04	2.68	2.51	2.17	2.05	1.99	2.62
18"	2.48	2.81	2.93	3.16	3.00	2.91	2.41	2.17	2.13	2.67
24"	2.02	2.29	2.25	2.80	2.72	2.68	2.33	2.15	2.04	2.36
36"	1.85	2.39	2.32	2.44	2.44	2.50	2.47	2.43	2.35	2.35
48"	1.92	1.86	1.75	1.79	1.85	1.81	1.85	1.84	1.77	1.83
60"	1.77	1.85	1.83	1.85	1.87	1.85	1.87	1.87	1.88	1.85
Mean	2.31	2.48	2.53	2.57	2.44	2.36	2.14	2.03	2.02	2.32
Outside										
<u>Non-spray</u>										
6"	3.74	3.00	3.46	3.06	2.81	2.36	1.99	1.77	1.99	2.69
12"	2.37	2.84	3.04	2.89	2.76	2.50	2.14	1.98	1.97	2.50
18"	2.38	2.80	2.87	3.16	3.07	2.90	2.54	2.37	2.36	2.72
24"	2.35	2.59	2.54	2.95	2.86	2.79	2.50	2.37	2.36	2.59
36"	2.03	2.09	2.01	2.11	2.13	2.12	2.05	2.03	2.03	2.07
48"	1.85	1.92	1.88	1.86	1.88	1.85	1.88	1.82	1.81	1.86
60"	1.34	1.63	1.53	1.58	1.64	1.60	1.59	1.56	1.52	1.55
Mean	2.29	2.41	2.48	2.52	2.45	2.30	2.10	1.99	2.01	2.28
Inside										
<u>Spray</u>										
6"	3.07	3.18	3.53	3.02	2.71	2.36	2.11	1.87	2.08	2.66
12"	2.61	2.95	3.32	3.04	2.78	2.54	2.08	1.97	2.05	2.59
18"	2.36	2.61	3.31	3.12	3.08	2.96	2.40	2.17	2.17	2.69
24"	2.20	2.35	2.69	2.83	2.89	2.86	2.51	2.25	2.23	2.53
36"	2.08	2.02	2.00	2.30	2.36	2.41	2.30	2.19	2.11	2.20
48"	----	2.07	2.07	2.06	2.18	2.22	2.18	2.14	2.12	2.13
60"	----	1.95	1.85	1.95	1.88	1.94	1.91	1.85	1.87	1.90
Mean	2.46	2.45	2.68	2.62	2.55	2.47	2.21	2.06	2.09	2.40
Inside										
<u>Non-spray</u>										
6"	3.10	2.68	3.15	2.57	2.34	1.98	1.59	1.55	1.81	2.31
12"	2.77	2.72	2.80	2.67	2.32	2.11	1.70	1.59	1.66	2.26
18"	2.49	2.72	2.81	2.75	2.60	2.49	1.80	1.66	1.61	2.33
24"	1.90	2.42	2.55	2.66	2.58	2.53	1.82	1.66	1.63	2.19
36"	1.46	1.62	1.58	2.07	2.13	2.11	1.86	1.65	1.60	1.79
48"	1.60	1.66	1.65	1.66	1.70	1.86	1.85	1.73	1.74	1.72
60"	1.48	1.46	1.40	1.35	1.39	1.38	1.40	1.52	1.54	1.44
Mean	2.11	2.18	2.28	2.25	2.15	2.07	1.72	1.62	1.66	2.00
PPT										
	.95	.31	.73	2.06	.89	3.57	.64	.09	1.46	

*Precipitation from December 18, 1966.

Table 1. Results of the analysis of variance for the effect of the treatment on the yield of the crop. The analysis was conducted using the method of least squares. The results are presented in the following table.

Treatment	Yield (kg/ha)	Standard Error	Mean Square	F-value	Significance
Control	1.25	0.05	1.56	1.25	0.32
T1	1.35	0.05	1.82	1.46	0.24
T2	1.45	0.05	2.08	1.68	0.18
T3	1.55	0.05	2.34	1.90	0.12
T4	1.65	0.05	2.60	2.12	0.08
T5	1.75	0.05	2.86	2.34	0.04
T6	1.85	0.05	3.12	2.56	0.02
T7	1.95	0.05	3.38	2.78	0.01
T8	2.05	0.05	3.64	3.00	0.005
T9	2.15	0.05	3.90	3.22	0.002
T10	2.25	0.05	4.16	3.44	0.001
T11	2.35	0.05	4.42	3.66	0.0005
T12	2.45	0.05	4.68	3.88	0.0002
T13	2.55	0.05	4.94	4.10	0.0001
T14	2.65	0.05	5.20	4.32	0.00005
T15	2.75	0.05	5.46	4.54	0.00002
T16	2.85	0.05	5.72	4.76	0.00001
T17	2.95	0.05	5.98	4.98	0.000005
T18	3.05	0.05	6.24	5.20	0.000002
T19	3.15	0.05	6.50	5.42	0.000001
T20	3.25	0.05	6.76	5.64	0.0000005
T21	3.35	0.05	7.02	5.86	0.0000002
T22	3.45	0.05	7.28	6.08	0.0000001
T23	3.55	0.05	7.54	6.30	0.00000005
T24	3.65	0.05	7.80	6.52	0.00000002
T25	3.75	0.05	8.06	6.74	0.00000001
T26	3.85	0.05	8.32	6.96	0.000000005
T27	3.95	0.05	8.58	7.18	0.000000002
T28	4.05	0.05	8.84	7.40	0.000000001
T29	4.15	0.05	9.10	7.62	0.0000000005
T30	4.25	0.05	9.36	7.84	0.0000000002
T31	4.35	0.05	9.62	8.06	0.0000000001
T32	4.45	0.05	9.88	8.28	0.00000000005
T33	4.55	0.05	10.14	8.50	0.00000000002
T34	4.65	0.05	10.40	8.72	0.00000000001
T35	4.75	0.05	10.66	8.94	0.000000000005
T36	4.85	0.05	10.92	9.16	0.000000000002
T37	4.95	0.05	11.18	9.38	0.000000000001
T38	5.05	0.05	11.44	9.60	0.0000000000005
T39	5.15	0.05	11.70	9.82	0.0000000000002
T40	5.25	0.05	11.96	10.04	0.0000000000001
T41	5.35	0.05	12.22	10.26	0.00000000000005
T42	5.45	0.05	12.48	10.48	0.00000000000002
T43	5.55	0.05	12.74	10.70	0.00000000000001
T44	5.65	0.05	13.00	10.92	0.000000000000005
T45	5.75	0.05	13.26	11.14	0.000000000000002
T46	5.85	0.05	13.52	11.36	0.000000000000001
T47	5.95	0.05	13.78	11.58	0.0000000000000005
T48	6.05	0.05	14.04	11.80	0.0000000000000002
T49	6.15	0.05	14.30	12.02	0.0000000000000001
T50	6.25	0.05	14.56	12.24	0.00000000000000005
T51	6.35	0.05	14.82	12.46	0.00000000000000002
T52	6.45	0.05	15.08	12.68	0.00000000000000001
T53	6.55	0.05	15.34	12.90	0.000000000000000005
T54	6.65	0.05	15.60	13.12	0.000000000000000002
T55	6.75	0.05	15.86	13.34	0.000000000000000001
T56	6.85	0.05	16.12	13.56	0.0000000000000000005
T57	6.95	0.05	16.38	13.78	0.0000000000000000002
T58	7.05	0.05	16.64	14.00	0.0000000000000000001
T59	7.15	0.05	16.90	14.22	0.00000000000000000005
T60	7.25	0.05	17.16	14.44	0.00000000000000000002
T61	7.35	0.05	17.42	14.66	0.00000000000000000001
T62	7.45	0.05	17.68	14.88	0.000000000000000000005
T63	7.55	0.05	17.94	15.10	0.000000000000000000002
T64	7.65	0.05	18.20	15.32	0.000000000000000000001
T65	7.75	0.05	18.46	15.54	0.0000000000000000000005
T66	7.85	0.05	18.72	15.76	0.0000000000000000000002
T67	7.95	0.05	18.98	15.98	0.0000000000000000000001
T68	8.05	0.05	19.24	16.20	0.00000000000000000000005
T69	8.15	0.05	19.50	16.42	0.00000000000000000000002
T70	8.25	0.05	19.76	16.64	0.00000000000000000000001
T71	8.35	0.05	20.02	16.86	0.000000000000000000000005
T72	8.45	0.05	20.28	17.08	0.000000000000000000000002
T73	8.55	0.05	20.54	17.30	0.000000000000000000000001
T74	8.65	0.05	20.80	17.52	0.0000000000000000000000005
T75	8.75	0.05	21.06	17.74	0.0000000000000000000000002
T76	8.85	0.05	21.32	17.96	0.0000000000000000000000001
T77	8.95	0.05	21.58	18.18	0.00000000000000000000000005
T78	9.05	0.05	21.84	18.40	0.00000000000000000000000002
T79	9.15	0.05	22.10	18.62	0.00000000000000000000000001
T80	9.25	0.05	22.36	18.84	0.000000000000000000000000005
T81	9.35	0.05	22.62	19.06	0.000000000000000000000000002
T82	9.45	0.05	22.88	19.28	0.000000000000000000000000001
T83	9.55	0.05	23.14	19.50	0.0000000000000000000000000005
T84	9.65	0.05	23.40	19.72	0.0000000000000000000000000002
T85	9.75	0.05	23.66	19.94	0.0000000000000000000000000001
T86	9.85	0.05	23.92	20.16	0.00000000000000000000000000005
T87	9.95	0.05	24.18	20.38	0.00000000000000000000000000002
T88	10.05	0.05	24.44	20.60	0.00000000000000000000000000001
T89	10.15	0.05	24.70	20.82	0.000000000000000000000000000005
T90	10.25	0.05	24.96	21.04	0.000000000000000000000000000002
T91	10.35	0.05	25.22	21.26	0.000000000000000000000000000001
T92	10.45	0.05	25.48	21.48	0.0000000000000000000000000000005
T93	10.55	0.05	25.74	21.70	0.0000000000000000000000000000002
T94	10.65	0.05	26.00	21.92	0.0000000000000000000000000000001
T95	10.75	0.05	26.26	22.14	0.00000000000000000000000000000005
T96	10.85	0.05	26.52	22.36	0.00000000000000000000000000000002
T97	10.95	0.05	26.78	22.58	0.00000000000000000000000000000001
T98	11.05	0.05	27.04	22.80	0.000000000000000000000000000000005
T99	11.15	0.05	27.30	23.02	0.000000000000000000000000000000002
T100	11.25	0.05	27.56	23.24	0.000000000000000000000000000000001

1.40 0.05 1.40

Table 2. Smilo Exclosure. Precipitation (in inches) and soil moisture readings (inches of moisture per 12" of soil) as affected by sagebrush control and grazing - 1967 (each figure is an average of readings in two access tubes).

<hr/>									
Outside									
<u>Spray</u>	<u>Mar. 24</u>	<u>May 14</u>	<u>June 8</u>	<u>June 21</u>	<u>July 16</u>	<u>Aug. 8</u>	<u>Sept. 1</u>	<u>Oct. 14</u>	<u>Mean</u>
6"	3.16	3.95	2.92	3.17	2.57	2.50	2.22	2.55	2.88
12"	1.95	2.31	2.19	2.21	2.10	2.10	2.04	2.11	2.13
18"	1.82	1.78	1.84	1.81	1.85	1.85	1.84	1.86	1.83
24"	1.94	1.82	1.89	1.89	1.86	1.92	1.87	1.86	1.88
36"	2.17	2.15	2.08	2.16	2.11	2.10	2.07	2.02	2.11
48"	1.64	1.69	1.64	1.66	1.64	1.67	1.62	1.62	1.65
60"	1.14	1.16	1.19	1.16	1.16	1.18	1.14	1.24	1.17
Mean	1.97	2.12	1.96	2.01	1.90	1.90	1.83	1.89	1.95
Outside									
<u>Non-spray</u>									
6"	2.53	3.41	2.27	2.69	2.02	1.77	1.63	1.93	2.28
12"	1.73	2.89	2.38	2.32	1.99	1.84	1.79	1.78	2.09
18"	1.45	2.01	1.85	1.81	1.67	1.55	1.47	1.48	1.66
24"	1.38	1.43	1.48	1.46	1.42	1.37	1.37	1.38	1.41
36"	1.35	1.39	1.37	1.37	1.36	1.38	1.35	1.36	1.37
48"	1.71	1.68	1.75	1.74	1.74	1.75	1.67	1.74	1.72
60"	1.79	1.75	1.82	1.77	1.77	1.80	1.74	1.77	1.78
Mean	1.71	2.08	1.84	1.88	1.71	1.64	1.57	1.63	1.76
Inside									
<u>Spray</u>									
6"	2.94	3.92	2.74	3.31	2.28	2.18	1.93	2.31	2.70
12"	1.94	2.67	2.35	2.42	2.02	1.97	1.91	1.89	2.15
18"	1.59	1.73	1.76	1.81	1.67	1.65	1.59	1.63	1.68
24"	1.52	1.52	1.56	1.58	1.54	1.58	1.58	1.60	1.56
36"	2.02	1.90	2.00	1.94	1.89	1.98	1.89	1.82	1.93
48"	2.74	2.69	2.73	2.74	2.72	2.75	2.58	2.64	2.70
60"	2.56	2.50	2.60	2.59	2.60	2.62	2.57	2.59	2.58
Mean	2.19	2.48	2.25	2.34	2.10	2.10	2.01	2.07	2.19
Inside									
<u>Non-spray</u>									
6"	3.29	3.73	2.69	3.12	2.30	2.04	1.86	2.26	2.66
12"	2.04	3.00	2.44	2.41	2.04	1.86	1.79	1.84	2.18
18"	1.73	2.39	2.12	2.06	1.96	1.81	1.70	1.73	1.94
24"	1.83	1.99	2.02	2.04	2.00	1.93	1.90	1.89	1.95
36"	1.86	1.84	1.87	1.88	1.88	1.85	1.87	1.88	1.87
48"	1.63	1.60	1.62	1.62	1.61	1.64	1.62	1.62	1.62
60"	1.37	1.37	1.38	1.36	1.37	1.37	1.36	1.37	1.37
Mean	1.96	2.27	2.02	2.07	1.88	1.79	1.73	1.80	1.94
<hr/>									
PPT	1.24	3.29	.98	1.96	1.54	.50	.13	1.83	
<hr/>									

*Precipitation from December 18, 1966.

Table 3. Cumberland #1 Exclosure. Precipitation (in inches) and soil moisture readings (inches of moisture per 12" of soil) as affected by sagebrush control-1967 (each figure is an average of readings in three access tubes).

Inside								
Spray	Apr. 20	June 9	June 22	July 17	Aug. 9	Sept. 1	Oct. 14	Mean
6"	3.25	2.97	3.46	1.70	1.49	1.42	2.25	2.36
12"	2.89	2.73	3.09	1.73	1.59	1.55	1.55	2.16
18"	1.89	2.05	2.23	1.81	1.64	1.59	1.59	1.83
24"	1.64	1.71	1.71	1.74	1.70	1.70	1.64	1.69
36"	1.82	1.88	1.89	1.87	1.86	1.88	1.83	1.86
48"	2.03	2.09	2.03	2.14	2.07	2.10	2.11	2.08
60"	2.08	2.10	2.13	2.12	2.12	2.08	2.04	2.10
Mean	2.23	2.22	2.36	1.87	1.78	1.76	1.86	2.01
PPT	2.45*	2.36	1.94	0.98	0.11	0.16	1.62	

Inside								
Non-spray	Apr. 20	June 9	June 22	July 17	Aug. 9	Sept. 1	Oct. 14	Mean
6"	3.44	2.70	3.20	1.78	1.54	1.49	1.75	2.27
12"	3.31	2.66	2.86	1.74	1.60	1.56	1.55	2.18
18"	3.07	2.82	2.75	1.90	1.86	1.80	1.75	2.28
24"	2.30	2.31	2.31	2.15	1.86	1.85	1.77	2.08
36"	1.89	1.86	1.89	1.93	1.90	1.89	1.89	1.86
48"	2.14	2.05	2.08	2.09	2.10	2.06	2.11	2.09
60"	2.08	2.13	2.13	2.15	2.09	2.08	2.07	2.10
Mean	2.61	2.36	2.46	1.96	1.85	1.82	1.84	2.12
PPT	2.45*	2.36	1.94	0.98	0.11	0.16	1.62	

*Precipitation from December 19, 1966.

Table 4. Cumberland #3 Exclosure. Precipitation (in inches) and soil moisture readings (inches of moisture per 12" of soil) as affected by sagebrush control-1967 (each figure is an average of readings in three access tubes).

Inside								
Spray	Apr. 20	June 9	June 22	July 17	Aug. 9	Sept. 1	Oct. 14	Mean
6"	4.06	2.73	3.47	1.98	1.78	1.65	2.05	2.53
12"	3.68	3.03	3.31	2.17	1.94	1.83	1.84	2.54
18"	3.70	3.39	3.41	2.47	2.08	1.97	1.97	2.71
24"	3.73	3.38	3.31	2.49	2.11	1.99	1.96	2.71
36"	2.83	3.05	3.02	2.53	2.17	2.06	2.08	2.53
48"	2.49	2.55	2.59	2.40	2.22	2.10	2.10	2.35
60"	2.16	2.29	2.33	2.30	2.24	2.15	2.15	2.23
Mean	3.24	2.92	3.06	2.34	2.08	1.97	2.02	2.52
PPT	2.83*	2.76	1.91	0.76	0.12	0.20	1.43	

Inside								
Non-spray	Apr. 20	June 9	June 22	July 17	Aug. 9	Sept. 1	Oct. 14	Mean
6"	3.89	2.60	3.39	1.81	1.62	1.46	1.82	2.37
12"	3.80	2.81	3.15	1.99	1.79	1.69	1.76	2.43
18"	3.83	3.21	3.20	2.25	1.96	1.83	1.84	2.59
24"	3.66	3.22	3.09	2.23	1.86	1.81	1.76	2.52
36"	2.18	2.70	2.64	2.06	1.82	1.68	1.69	2.11
48"	1.90	2.10	2.12	2.00	1.83	1.80	1.81	1.94
60"	1.76	1.79	1.84	1.78	1.70	1.65	1.69	1.74
Mean	3.00	2.63	2.78	2.02	1.80	1.70	1.77	2.24
PPT	2.83*	2.76	1.91	0.76	0.12	0.20	1.43	

*Precipitation from December 19, 1966.

Table 1. Precipitation at Khabarovsk. Precipitation (in mm) and soil moisture (in %) of soil at Khabarovsk in 1955. (Data for 1955 are given in an average of readings in 1955)

Month	1955	1956	1957	1958	1959	1960	1961
1	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2	1.15	1.15	1.15	1.15	1.15	1.15	1.15
3	1.15	1.15	1.15	1.15	1.15	1.15	1.15
4	1.15	1.15	1.15	1.15	1.15	1.15	1.15
5	1.15	1.15	1.15	1.15	1.15	1.15	1.15
6	1.15	1.15	1.15	1.15	1.15	1.15	1.15
7	1.15	1.15	1.15	1.15	1.15	1.15	1.15
8	1.15	1.15	1.15	1.15	1.15	1.15	1.15
9	1.15	1.15	1.15	1.15	1.15	1.15	1.15
10	1.15	1.15	1.15	1.15	1.15	1.15	1.15
11	1.15	1.15	1.15	1.15	1.15	1.15	1.15
12	1.15	1.15	1.15	1.15	1.15	1.15	1.15

*Precipitation from November 15, 1955.

Table 2. Precipitation at Khabarovsk. Precipitation (in mm) and soil moisture (in %) of soil at Khabarovsk in 1956. (Data for 1956 are given in an average of readings in 1956)

Month	1956	1957	1958	1959	1960	1961	1962
1	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2	1.15	1.15	1.15	1.15	1.15	1.15	1.15
3	1.15	1.15	1.15	1.15	1.15	1.15	1.15
4	1.15	1.15	1.15	1.15	1.15	1.15	1.15
5	1.15	1.15	1.15	1.15	1.15	1.15	1.15
6	1.15	1.15	1.15	1.15	1.15	1.15	1.15
7	1.15	1.15	1.15	1.15	1.15	1.15	1.15
8	1.15	1.15	1.15	1.15	1.15	1.15	1.15
9	1.15	1.15	1.15	1.15	1.15	1.15	1.15
10	1.15	1.15	1.15	1.15	1.15	1.15	1.15
11	1.15	1.15	1.15	1.15	1.15	1.15	1.15
12	1.15	1.15	1.15	1.15	1.15	1.15	1.15

*Precipitation from November 15, 1956.

Table 5. Soil temperature readings in degrees centigrade from the Granite Mountain and Smilo Exclosures - 1966 and 1967

<u>Granite Mountain Exclosure</u>								
<u>Date</u>	<u>Sprayed</u>				<u>Non-sprayed</u>			
	<u>1"</u>	<u>8"</u>	<u>15"</u>	<u>22"</u>	<u>1"</u>	<u>8"</u>	<u>15"</u>	<u>22"</u>
3-12-66	0.0	-2.0	-3.0	-3.5	-1.0	-4.0	-4.0	-3.0
4-16-66	11.6	6.7	3.9	2.8	10.0	7.8	5.6	4.1
6-10-66	18.5	19.8	14.0	10.1	21.0	14.3	11.1	10.1
6-29-66	24.5	27.6	15.7	13.5	25.0	21.9	17.1	----
8- 1-66	23.8	20.1	20.0	18.4	24.6	20.8	21.2	----
8-14-66	27.0	20.2	16.7	16.4	28.1	20.8	17.7	17.5
8-31-66	16.0	17.2	17.0	16.0	15.4	18.0	18.0	17.0
9-11-66	21.0	16.0	15.8	15.2	20.0	16.5	16.8	16.8
10-20-66	-1.0	2.2	4.0	6.0	0.5	2.2	0.3	8.0
11-17-66	3.2	1.2	2.0	3.8	3.4	1.0	2.6	2.2
12-17-66	----	-2.8	-1.8	-0.9	----	-3.3	-2.3	-1.1
3-23-67	0.0	-1.0	-1.0	-1.0	-0.1	-0.6	-0.0	-0.2
4-29-67	3.0	5.1	4.0	3.5	3.2	5.5	5.0	4.0
5-12-67	8.0	6.0	4.8	5.0	10.0	6.0	5.0	5.4
6- 9-67	10.2	11.0	11.0	10.0	11.0	11.1	11.4	10.8
6-21-67	20.0	14.0	12.2	12.0	20.2	15.0	13.5	12.8
7-17-67	16.5	17.0	16.0	14.8	17.0	18.4	18.0	16.0
8- 9-67	14.2	17.6	17.2	16.8	15.2	18.2	18.8	18.0
9- 1-67	24.9	19.9	17.1	16.8	22.0	20.0	17.8	17.3
10-14-67	5.1	7.9	10.3	10.5	5.2	8.1	9.8	10.1
<u>Date</u>	<u>Smilo Exclosure</u>							
	<u>1"</u>	<u>8"</u>	<u>15"</u>	<u>22"</u>	<u>1"</u>	<u>8"</u>	<u>15"</u>	<u>22"</u>
3-12-66	0.5	1.5	2.0	2.0	0.0	2.3	2.8	3.0
4-17-66	4.0	8.2	9.1	9.0	3.8	8.2	9.0	9.4
6-10-66	21.4	17.8	16.9	16.2	20.9	18.1	17.0	16.2
7- 1-66	21.8	22.0	21.3	20.2	20.9	23.0	----	20.3
8-15-66	26.4	23.2	22.4	22.8	27.6	23.0	26.4	22.2
8-30-66	31.8	22.2	20.4	21.2	31.0	22.8	23.5	21.4
9- 8-66	30.1	21.2	20.2	21.0	29.8	22.4	26.2	21.0
10-21-66	----	8.2	8.5	10.8	----	8.4	----	14.6
11-19-66	0.2	4.0	4.2	6.2	0.2	4.0	4.0	6.0
12-18-66	-5.1	-0.4	-0.8	1.6	-4.2	-0.8	0.1	1.8
3-23-67	7.8	3.0	4.0	4.9	7.0	4.2	5.0	4.2
5-13-67	5.0	9.0	8.0	9.0	4.0	8.0	8.8	8.8
6- 8-67	24.2	15.8	14.8	14.5	24.9	17.2	16.8	15.8
6-20-67	17.0	15.2	15.2	16.0	17.2	17.2	17.2	16.6
7-16-67	19.8	20.8	20.2	20.2	20.4	22.8	22.8	21.0
8- 8-67	27.2	19.0	20.0	21.0	33.0	21.0	21.6	21.0
9- 1-67	13.1	----	----	20.5	13.2	20.3	21.3	20.5
10-14-67	7.8	11.2	----	13.1	5.6	10.6	12.2	13.5

Table 2. Soil temperature readings at various depths from the surface to 100 cm. (1962)

Location 1 - 100 cm							
Date	10 cm	20 cm	30 cm	40 cm	50 cm	60 cm	70 cm
1-1-62	1.0	0.5	0.2	0.1	0.1	0.1	0.1
1-15-62	1.5	0.8	0.4	0.2	0.1	0.1	0.1
2-1-62	2.0	1.0	0.5	0.3	0.2	0.1	0.1
2-15-62	2.5	1.2	0.6	0.4	0.2	0.1	0.1
3-1-62	3.0	1.5	0.8	0.5	0.3	0.2	0.1
3-15-62	3.5	1.8	1.0	0.6	0.4	0.2	0.1
4-1-62	4.0	2.0	1.2	0.7	0.5	0.3	0.2
4-15-62	4.5	2.2	1.4	0.8	0.6	0.4	0.2
5-1-62	5.0	2.5	1.6	0.9	0.7	0.5	0.3
5-15-62	5.5	2.8	1.8	1.0	0.8	0.6	0.4
6-1-62	6.0	3.0	2.0	1.1	0.9	0.7	0.5
6-15-62	6.5	3.2	2.2	1.2	1.0	0.8	0.6
7-1-62	7.0	3.5	2.4	1.3	1.1	0.9	0.7
7-15-62	7.5	3.8	2.6	1.4	1.2	1.0	0.8
8-1-62	8.0	4.0	2.8	1.5	1.3	1.1	0.9
8-15-62	8.5	4.2	3.0	1.6	1.4	1.2	1.0
9-1-62	9.0	4.5	3.2	1.7	1.5	1.3	1.1
9-15-62	9.5	4.8	3.4	1.8	1.6	1.4	1.2
10-1-62	10.0	5.0	3.6	1.9	1.7	1.5	1.3
10-15-62	10.5	5.2	3.8	2.0	1.8	1.6	1.4
11-1-62	11.0	5.5	4.0	2.1	1.9	1.7	1.5
11-15-62	11.5	5.8	4.2	2.2	2.0	1.8	1.6
12-1-62	12.0	6.0	4.4	2.3	2.1	1.9	1.7
12-15-62	12.5	6.2	4.6	2.4	2.2	2.0	1.8
1-1-63	13.0	6.5	4.8	2.5	2.3	2.1	1.9
1-15-63	13.5	6.8	5.0	2.6	2.4	2.2	2.0
2-1-63	14.0	7.0	5.2	2.7	2.5	2.3	2.1
2-15-63	14.5	7.2	5.4	2.8	2.6	2.4	2.2
3-1-63	15.0	7.5	5.6	2.9	2.7	2.5	2.3
3-15-63	15.5	7.8	5.8	3.0	2.8	2.6	2.4
4-1-63	16.0	8.0	6.0	3.1	2.9	2.7	2.5
4-15-63	16.5	8.2	6.2	3.2	3.0	2.8	2.6
5-1-63	17.0	8.5	6.4	3.3	3.1	2.9	2.7
5-15-63	17.5	8.8	6.6	3.4	3.2	3.0	2.8
6-1-63	18.0	9.0	6.8	3.5	3.3	3.1	2.9
6-15-63	18.5	9.2	7.0	3.6	3.4	3.2	3.0
7-1-63	19.0	9.5	7.2	3.7	3.5	3.3	3.1
7-15-63	19.5	9.8	7.4	3.8	3.6	3.4	3.2
8-1-63	20.0	10.0	7.6	3.9	3.7	3.5	3.3
8-15-63	20.5	10.2	7.8	4.0	3.8	3.6	3.4
9-1-63	21.0	10.5	8.0	4.1	3.9	3.7	3.5
9-15-63	21.5	10.8	8.2	4.2	4.0	3.8	3.6
10-1-63	22.0	11.0	8.4	4.3	4.1	3.9	3.7
10-15-63	22.5	11.2	8.6	4.4	4.2	4.0	3.8
11-1-63	23.0	11.5	8.8	4.5	4.3	4.1	3.9
11-15-63	23.5	11.8	9.0	4.6	4.4	4.2	4.0
12-1-63	24.0	12.0	9.2	4.7	4.5	4.3	4.1
12-15-63	24.5	12.2	9.4	4.8	4.6	4.4	4.2

S E C T I O N I I

PRECIPITATION PATTERN STUDY, 1967

Introduction

During 1960 over 70 gauges were installed at 6 to 12 mile intervals throughout the Big Horn and Wind River Basins. Since that time approximately 20 gauges in the Big Horn Basin have been discontinued and some 60 gauges have been installed at various exclosures and study sites throughout western Wyoming. These gauges are simple cans, 12" in height and approximately 2.75" in diameter. This diameter allows reading of precipitation by merely pouring the water into a 100 ml cylinder, and converting ml readings to inches of rainfall. One hundred ml is equal to 1" of precipitation. The gauges are read on the same four dates each year - April 15, July 1, September 1 and October 15. Personnel of the Worland, Lander, Rawlins, Casper and Rock Springs Districts of the Bureau of Land Management cooperate with the University in reading the instruments. Some of the gauges are read by personnel of the Soil Conservation Service and the Wyoming Game and Fish Commission.

The weather bureau and the U. S. Geological Survey precipitation data are used to provide additional information from independent locations. This cooperative effort provides an effective network for future evaluation of precipitation patterns. A map of precipitation gauge locations was presented in the 1963 report.

1967 Results

Precipitation data for 1966 from the University gauges are presented in Table 1; those from the U. S. weather bureau stations are presented in Table 2. The rain gauges located for general pattern studies of precipitation within the Big Horn Basin were discontinued after the July 1, 1965, reading. The others located in the Wind River Basin are to be continued in conjunction with studies being conducted by the Bureau of Land Management and U. S. Geological Survey in that area.

Only moderate amounts of precipitation occurred during the winter period from October 15, 1966 through April 15, 1967. Precipitation during the spring period from April 15, 1967 through June 30, 1967 was much greater than normal. As much as 10.47" occurred during the 2½ month period. Most areas received from 5" to 8" of precipitation. Lowest values were recorded in the Red Desert area of Southwestern Wyoming.

Growing conditions were very favorable especially in the Big Horn Basin and Wind River Basin areas. Many annuals which had never before been observed were seen at the various exclosures. The abundance of the usual annual weeds as well as the species not before observed is not to be confused with a decrease in condition, although the previous year 1966, was extremely dry and certainly resulted in decreased vigor of native perennial plants. Under conditions of very favorable moisture and temperature characteristics annual plants can be expected to be abundant. This situation is not a perennial type of condition and we would seldom

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

The following is a list of the members of the Department of Chemistry, University of Chicago, who have been elected to the position of Associate Professor during the year 1954-1955. The names are listed in alphabetical order of their last names.

Dr. J. H. Goldstein, Department of Chemistry, University of Chicago, 5734 South Ellis Avenue, Chicago 37, Illinois.

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find more than one or two years of extremely vigorous growth of annuals. The generally rigid and arid climatic conditions of western Wyoming by their very character limit the annuals, most of which are winter annuals and require a long and early growing season to be able to compete effectively with perennial plants for moisture and nutrients.

Summer readings from July 1 through August 30, 1967 were relatively low with most gauges recording less than 1" of precipitation. These values were higher than those recorded during the previous summer. During the fall period from September 1 through October 15 precipitation by and large was above normal with more than 2" of rainfall recorded at many of the locations. Several of the storms which went through the area during that period resulted in very intensive precipitation and subsequent soil erosion.

In conjunction with the grazing systems study in the area west of Baggs 17 new rain gauges were established during 1967. These data will be reported in this and subsequent reports.

Table 1. Precipitation data for 1967 from University of Wyoming gauges for the periods - October 15- April 15 (winter), April 15-July 1 (spring), July 1-September 1 (summer) and September 1-October 15 (fall).

Rain Gauge Number	County	Rain Gauge Name	Winter	Spring	Summer	Fall	1967 Total	Long Term Average	No. of Years
123	Big Horn	Big Flat Exc.		Est.	.75	1.40			
24		Halogeton Pastures	.78	3.40	.28	1.10	5.56	5.18	8
12		Horse Creek	5.00	6.70	.47	1.85	14.02	11.20	7
113		Horse Haven Exc.	1.80	2.18	2.85	1.55	8.38	8.38	1
21		Kane Deer Exc.	5.27	5.73	.60	2.82	14.42	11.10	3
116		Kane Seed Exc.		Est.	N.R.	1.89 ¹			
23		Sheep Springs	5.97	7.82	1.03	2.91	17.73	13.93	7
112		Shell Study Area	1.48	3.52	2.08	1.67	8.75	8.75	1
27	Carbon	Little Robber #5	3.75	4.06	1.80	3.70	13.31	9.56	6
127		Oppenheimer(RG #4)				Est.			
128		Oppenheimer Exc. #1(RG #5)			Est.	1.75			
129		Oppenheimer-C(RG #6)				Est.			
124		Poison Butte Exc. #1(RG #1)			Est.	1.68			
125		Poison Butte Exc. #2(RG #2)				Est.			
126		Poison Butte(RG #3)				Est.			
130		Powder Rim-C Exc. #1(RG #7)			Est.	1.10			
26		Red Wash #1	3.00	2.62	1.53	3.57	10.72	8.74	6
25		Red Wash #3	2.67	3.60	.64	3.91	10.82	9.23	6
52	Fremont	Alkali Flats	1.51	7.50	.55	1.08	10.64	8.50	7
5		Ant Plot Exc. Lander	1.37	6.21	.29	1.14	9.01	8.22	7
89		Birdseye Ranch	1.12	1.44		.08		8.32	5
10		Boysen Reservoir Exc.	.87	5.19	.25	1.24	7.55	4.78	8
85		Bridger Creek	2.43	8.07	.97	2.38	13.85	11.79	5
49		Canyon Creek	1.40	7.21	.61	1.30	10.52	8.22	6
59		Carter Divide Exc.	1.80	6.14	.82	1.33	10.09	7.73	7
88		Comet Mine	.91	3.99	.81	1.06	6.77	10.97	5
60		Dishpan Butte #1 Exc.	1.82	4.02	2.30	1.25	9.39	10.61	6
61		Dishpan Butte #2 Exc.	1.85	6.27	1.38	2.03	11.53	9.36	7
86		Dry Creek	1.39	6.91	.71	1.73	10.74	7.16	7
58		Empty Cartridge Exc.	1.78	5.70	.62	1.05	9.15	7.94	5
55		Fraser Seed Plot	1.36	6.80	.85	1.33	10.34	8.57	5
48		Fuller Seed Plot	2.10	5.48	.25	1.20	9.03	8.36	7
46		Gibbs Butte	1.12	7.01	.25	1.06	9.44	7.12	7
6		Granite Mtn.	1.78	6.46	1.52	1.46	11.22	8.86	4
62		Hall Creek Div. Exc.	3.46	10.00	.97	1.30	15.73	11.50	7
87		Hoodoo Creek	.84	6.72	.55	1.56	9.67	6.13	7
64		Hudson	1.80	8.20	.83	1.28	12.11	8.87	7

Rain Gauge Number	County	Rain Gauge Name	Winter	Spring	Summer	Fall	1967 Total	Long Term Average	No. of Years
68		Johnson	1.45	7.33	.98	2.01	11.77	7.79	5
63		Little Popo Agie	1.81	8.00	.98	1.25	12.04	11.19	7
56		Logan #1 Exc.	1.64	5.78	.69	1.03	9.14	8.24	7
57		Logan #2 Exc.	1.37	6.71	.51	1.20	9.79	8.28	7
16		Lower Govt. Draw #2	2.25	8.35	1.30	1.76	13.66	10.56	7
81		Mack Ranch	1.33	6.19	.79	1.74	10.05	7.74	6
67		Madden	2.39	10.47	.70	.96	14.52	9.84	6
14		McGraw Flat Exc.	2.06	7.17	1.18	2.01	12.42	9.44	7
47		Muskrat	1.08	6.17	.25	1.14	8.46	6.94	6
50		Muskrat #5 Exc.	1.73	5.44	.17	1.14	8.48	8.13	7
65		Pan American	2.75	6.70	1.20	1.27	11.92	8.32	6
51		Poison Creek	1.15	7.16	.23	1.17	9.71	8.13	5
80		Poison Draw	1.33	7.19	1.02	1.52	11.06	7.52	7
11		Sweetwater	2.26		.33	1.48		6.32	4
9		Upper Govt. Draw #1	1.86	6.75	.69	1.85	11.15	8.27	7
117	Hot Springs	Big Bend Exc.	Est. ²	.40 ³	1.12	1.90			
76		Cochran Exc.	2.73	7.89	.76	1.38	12.76	10.56	7
77		Kirby Creek Exc.	2.51	8.10	.85	1.45	12.91	9.32	5
111		Lower Enos Creek	Est.	4.16	2.84	1.93			
22		LU Juniper Study		6.14	2.75	2.27		14.46	2
75		Sand Gulch Exc.	1.95	7.00	.52	1.59	11.06	9.27	6
32	Lincoln	Cumberland #2	6.20 ⁴	4.20 ⁵	.42	1.46	12.28	8.46	4
33		Cumberland #3	4.37	5.27	.48	1.43	11.55	10.46	4
35		Elk Mtn. Pit	3.90 ⁶	4.30 ⁷	.70	1.15	10.05	7.44	3
143	Natrona	Arminto Exc.	3.53	6.16	.48	1.68	11.85	11.85	1
109		Bolton Creek Exc.	Est.	3.87	1.27	1.57			
141		Donlin Exc.	Est.	4.64	1.20	1.45			
110		EK Exc.	3.53	6.16	.48	1.68	11.85	11.85	1
142		Merino Exc.	Est.	7.20	1.45	1.88			
108		Mud Springs	Est.	5.28	3.53	2.24			
107		Owl Draw	2.08	4.65	.58	2.31	9.62	9.62	1
144		Poison Spider Exc.	Est.	5.75	2.00	1.50			
106		Stinking Creek	3.22	5.36	1.26	1.78	11.62	11.62	1
100	Park	Buffalo Basin Exc.	2.15	8.31	1.28	1.24	12.98	12.98	1
20	Sweetwater	Black Mountain	2.23	2.34	.83			7.06	6
30		Boars Tusk	1.79	2.65	.72	1.72	6.88	7.49	7

Rain Gauge Number	County	Rain Gauge Name	Winter	Spring	Summer	Fall	1967 Total	Long Term Average	No. of Years
18		Cedar Mtn. Exc.	1.93	3.58	1.49	.40	7.40	8.34	6
102		Chandler Simpson Well	1.68			1.04			
103		Daley Hay Corral	1.61	3.67	.57	1.51	7.36	7.36	1
2		Farson	2.07	3.33	.94	1.35	7.69	6.14	6
95		Farson Guzzler #1	2.47	2.85	.62	1.28	7.22	7.78	3
96		Farson Guzzler #2	3.05	3.73	.91	1.71	9.40	8.84	3
97		Farson Guzzler #3	1.90	2.42	.75	1.46	6.53	6.95	3
98		Farson Guzzler #4	2.36	2.54	.65	1.37	6.92	7.46	3
99		Farson Guzzler #5	1.62 ⁸	3.05	.69	1.22	6.58	6.83	3
122		Firehole Guzzler #10	Est.	2.65 ⁹	.42	.54			
104		J.O. Headquarters	2.13	3.12	.71	1.56	7.50	6.42	2
105		Len Hay Corral	2.15	2.54	.38	.82	5.89	6.24	2
131		Powder Rim D Exc. #1(RG #8)				Est.			
132		Powder Rim D-C(RG #9)				Est.			
133		Powder Rim D-C(RG #10)			Est.	1.25			
134		Powder Rim D-B(RG #11)				Est.			
135		Powder Rim B-Stateline(RG #12)			Est.	1.10			
136		Powder Rim B Exc. #1(RG #13)			Est.	1.48			
137		Powder Rim B Exc. #2(RG #14)				Est.			
138		Powder Rim A-B(RG #15)			Est.	1.20			
139		Powder Rim A Exc. #1(RG #16)			Est.	1.41			
140		Powder Rim A(RG #17)				Est.			
118		Power Line Guzzler #6	Est. ¹⁰	2.36 ¹¹	1.37	1.41			
119		Power Line Guzzler #7	Est. ¹²	2.51 ¹³	1.34	1.66			
19		Radio Tower	1.84	3.17	.89	1.14	7.04	7.02	7
28		Red Wash #2	2.00 ¹⁴	2.95 ¹⁵	.34	3.17	8.64	7.38	6
120		Steamboat Guzzler #8	Est. ¹⁴	2.90 ¹⁵	2.05	1.40			
121		Steamboat Guzzler #9	Est. ¹⁶	2.75 ¹⁷	2.06	1.17			
101		Ten Mile Ridge	1.14	3.35	.57	1.17	6.23	5.85	2
31	Uinta	Cumberland #1	3.75	5.18	.37	1.62	10.92	9.11	3
34		Cumberland #4	5.30		.29	1.51		7.97	3
1	Washakie	Ant Hill Worland	1.34	3.67	.34	2.28	7.63	6.53	8
41		Bud Kimball Exc.	2.60	6.50	1.12	2.00	12.22	9.18	6
7		Buffalo Creek Exc.	3.84	9.96	1.11	1.65	16.56	9.95	6
17		Burnt Wagon	1.43	4.20	.35	1.96	7.94	6.13	6
8		Demer Exc.	2.05	4.60	.53	1.82	9.00	7.79	8
4		Dutch Nick Flat	1.40	4.16	.91	2.52	8.99	7.09	7
114		East Worland Study Area	1.38	3.50	1.83				

Rain Gauge Number	County	Rain Gauge Name	Winter	Spring	Summer	Fall	1967 Total	Long Term Average	No. of Years
15		15 Mile Study Pastures	1.38	3.50	1.82	2.56	9.26	6.72	7
36		Smilo Exc.	2.44	6.61	.90	1.83	11.78	8.48	7
39		2 Mile Hill Exc.	3.67	4.48	.49	1.88	10.52	10.38	7
13		West Pasture	1.11	5.98	.42	1.65	9.16	6.98	6
115		Worland Cattle Co. Exc.	Est. ¹⁸	.10 ¹⁹	.90	2.29			

- N.R. - Not Read
- 1 - Includes precip. from July 1 to Oct. 15
 - 2 - Est. 27 June 67
 - 3 - Includes precip. from June 27 to July 1
 - 4 - Includes precip. from Oct. 15 to May 24
 - 5 - Includes precip. from May 24 to July 1
 - 6 - Includes precip. from Oct. 15 to May 24
 - 7 - Includes precip. from May 24 to July 1
 - 8 - Est. May 20, 1967
 - 9 - Includes precip. from May 20 to July 1
 - 10 - Est. May 9, 1967
 - 11 - Includes precip. from May 9 to July 1
 - 12 - Est. June 30, 1967
 - 13 - Includes precip. from June 30 to July 1
 - 14 - Est. May 12, 1967
 - 15 - Includes precip. from May 12 to July 1
 - 16 - Est. May 17, 1967
 - 17 - Includes precip. from May 17 to July 1
 - 18 - Est. June 27, 1967
 - 19 - Includes precip. from June 27 to July 1

Table 2. Precipitation data from the U. S. Weather Bureau Stations for the period October 15, 1966 to October 15, 1967.

	<u>Winter</u>	<u>Spring</u>	<u>Summer</u>	<u>Fall</u>			
	Oct. 15	Apr. 15	July 1	Sept. 1		Long	No.
	to	to	to	to	1967	Term	of
Station Name	Apr. 15	July 1	Sept. 1	Oct. 15	Total ²	Average ³	Years ³
Big Horn Basin							
Anchor Dam	4.09	11.46	2.85	1.45	19.85		
Basin	1.79	5.68	.43	1.41	9.31	6.21	59
Black Mountain	4.65	9.80	2.46	1.71	18.62		
Cody 12 SE	1.64	10.79	1.68	1.60	15.71		
Deaver	.88	3.97	.38	.48	5.72	5.21	48
Cmblem	2.08	4.81	.97	1.39	9.25		
Grass Creek	---- ⁴	7.61	1.14	1.60			
Graybull 1 S	1.26	2.83	1.22	1.24	6.55		
Heart Mountain	2.39	6.11	1.15	1.08	10.73		
Lovell	1.66	4.86	1.07	.51	8.10	6.92	54
Powell	.90	5.38	1.29	----		5.67	57
Rairden 2 WSW	1.69	4.24	.53	2.08	8.54		
Shell	3.45	6.19	.58	1.69	11.91		
Ten Sleep 4 NE	4.08	10.13	.50	3.15	17.86		
Ten Sleep 16 SSE	4.91	8.45	2.22	1.50	17.08		
Thermopolis 2	4.22	9.52	.59	1.91	16.24	11.01	2
Thermopolis 25 WNW	2.46	9.88	1.89	1.26	15.49		
Worland	1.80	4.85	.40	2.87	9.92	7.76	53
Worland FAA AP	2.18	5.69	.36	2.78	11.01		
Wind River Basin							
Boysen Dam	1.54	7.76	.37	1.41	11.08		
Diversion Dam	2.08	9.87	1.23	1.15	14.33	9.45	46
Fort Washakie 2 S	2.84	11.31	1.18	1.38	16.71	11.90	58
Gas Hills 4 E	2.41	5.32	----	1.60			
Lander WB AP	3.84	10.86	1.02	1.50	17.22	13.58	75
Lost Cabin	2.09	7.15	.72	1.27	11.23		
Morton 1 NW	1.89	9.75	.80	1.50 ^E	13.94		
Pavillion	1.25	8.97	.51	1.22	11.95	8.67	42
Riverton	1.12	6.84	----	1.31		8.79	47
Sand Draw	1.94	8.64	1.49	1.38	13.45		
Shoshoni	.69	6.76	.45	1.12	9.02		
Southwest Wyoming							
Farson	2.10	3.65	1.46	1.54	8.75		
Kemmerer	3.07	5.08	.10	1.40	9.65		
Rock Springs	2.55	4.36	.52	1.34	8.77		
Rock Springs FAA AP	3.06	4.36	.39	1.40	9.21		
Wamsutter 1 N	1.13	4.23	.63	1.96	7.95		
Muddy Gap	----	5.19	.75	1.28			
Rawlins FAA AP	3.17	4.23	1.53	1.44	10.37		

¹Weather Bureau. 1966-1967. Climatological Data - Wyoming. U. S. Dept. Commerce. Vols. 75 and 76.

²Computed for the period October 15, 1966 to October 15, 1967

³Weather Bureau. 1966. Climatological Data - Wyoming Annual Summary. U. S. Dept. Commerce. Vol. 75, No. 13

⁴No record

^EEstimated

S E C T I O N I I I

EXCLOSURE STUDIES (PRODUCTION, COVER, AND PRECIPITATION PHASE) 1967

Vegetation production studies on exclosures and relic areas of the Big Horn and Wind River Basins were initiated during the 1962 field season. Most of the exclosures were constructed in 1959 and 1960. The objectives of the program were to determine:

1. the relationship of annual herbage production to area cover percentage;
2. the relationship of annual herbage production changes to variations in time and amount of available moisture;
3. the relationship of plant height of major forage species to annual herbage production and to time and amount of available moisture;
4. the influence of several range improvement practices on herbage production, area cover, and plant height;
5. the relationship of percentage frequency to area cover and herbage production.

Methods and Procedures

Area cover and herbage production studies on sagebrush-grass sites were conducted on transects of 20 quadrats, 1' x 1', spaced systematically along a randomly located 100' steel tape. On sites dominated by saltsage, data were obtained in like manner except that plot size was 1' x 10'. The plot frame was placed at right angles to the steel tape and vegetation data were subdivided into ten subplots.

Area cover of herbaceous and low growing semi-woody species was estimated within each square foot plot. Shrub crown cover, including that of prickly-pear cactus and phlox, was estimated within the square foot plots, but these data were not combined when comparing area cover to forage production.

Forage production was determined by clipping herbaceous species at ground or crown level. Exclosures were clipped on or near the same date as the previous years. Clippings were oven-dried at 70°C for 24 hours prior to weighing.

Precipitation data were recorded from simple aluminum rain gauges installed at each exclosure. Precipitation data were recorded four times a year - April 15, July 1, September 1, and October 15.

Metal stakes were driven into the ground for permanent photo location points in the area where production studies are being conducted in each exclosure.

Names of plants which occurred in the production study areas are shown in Table 1. Included are the four letter code names by which the plants are identified in the tabular material; genus, species, and common names, and life form and characteristic longevity of the plants.

1967 Results

A list, by counties, of production study areas is presented in Table II of the report. General location of exclosures were shown on maps in the 1964 report. The tabular data of production, cover, frequency, and precipitation are arranged alphabetically by exclosure or study area name following Table II.

Production clipping in 1967 was conducted both inside and outside the exclosures to determine the influence of grazing upon the vegetation during the six previous years. In some instances significant variations in production were noted outside the exclosures as compared to inside. Some areas however, showed very little difference. At the exclosures where sagebrush had been controlled, response of understory vegetation to the procedure was easily visible both inside and outside. Production values were lower in the grazed areas but was greater on the sprayed sites than on the non-sprayed. Both Upper and Lower Government Draw study areas showed moderate to heavy use outside the exclosure on the clipping dates.

The influence of the wet spring and summer of 1967, which increased plant growth, was evident in the production values of the study areas. However, production on the areas was probably adversely affected by the extremely dry spring and summer of the previous year, 1966.

TABLE I. LIST OF PLANT NAMES WHICH OCCURRED IN PRODUCTION STUDY AREAS

Code	Genus - Species	Common Name	Life Form	Longevity
AGCR	Agropyron cristatum	Crested wheatgrass	Grass	Perennial
AGGR	Agropyron griffithsii	Griffith's wheatgrass	Grass	Perennial
AGSM	Agropyron smithii	Western wheatgrass	Grass	Perennial
AGSP	Agropyron spicatum	Bluebunch wheatgrass	Grass	Perennial
ALTE	Allium textile	Textile onion	Forb	Perennial
ANRO	Antennaria rosea	Rose pussytoes	Forb	Perennial
ARA	Arabis spp.	Rockcress	Forb	Perennial
ARAR	Artemisia arbuscula	Low sagebrush	Shrub	Perennial
ARDR	Arabis drummondii	Rockcress	Forb	Perennial
ARHO	Arenaria hookeri	Hooker sandwort	Forb	Perennial
ARNO	Artemisia nova	Black sagebrush	Shrub	Perennial
ARPE	Artemisia pedatifida	Brown sagebrush	Half-shrub	Perennial
ARSP	Artemisia spinescens	Bud sagebrush	Half-shrub	Perennial
ARTR	Artemisia tridentata	Big sagebrush	Shrub	Perennial
ASMI	Astragalus missouriensis	Missouri milkvetch	Forb	Perennial
AST	Astragalus spp.	Milkvetch	Forb	Perennial
ATAR	Atriplex argentea	Silverscale saltbush	Forb	Annual
ATNU	Atriplex nuttallii	Nuttall saltbush	Half-shrub	Perennial
BOGR	Bouteloua gracilis	Blue grama	Grass	Perennial
BRCO	Bromus commutatus	Hairy chess	Grass	Annual
BRJA	Bromus japonicus	Japanese chess	Grass	Annual
BRTE	Bromus tectorum	Cheatgrass	Grass	Annual
CAEL	Carex eleocharis	Needleleaf sedge	Sedge	Perennial
CAFI	Carex filifolia	Threadleaf sedge	Sedge	Perennial
CAMI	Camelina microcarpa	Littlepod falseflax	Forb	Annual
CANU	Calochortus nuttallii	Sego lily	Forb	Perennial
CAS	Castilleja spp.	Paintbrush	Forb	Perennial
CHAL	Chenopodium album	Lambsquarter	Forb	Annual
CHTE	Chorispora tenella	Chorispora	Forb	Annual
CHVI	Chrysothamnus viscidiflorus	Green rabbitbrush	Shrub	Perennial
CLSE	Cleome serrulata	Rocky Mt. bee plant	Forb	Annual
CRBR	Cryptantha bradburiana	Miners candle	Forb	Perennial
CRE	Crepis spp.	Hawksbeard	Forb	
CREL	Crepis elegans	Showy hawksbeard	Forb	Perennial
DEPI	Descurainia pinnata	Pinnate tansymustard	Forb	Annual
ERCO	Erigeron compositus	Fernleaf fleabane	Forb	Perennial
ERI	Erigeron spp.	Fleabane	Forb	Perennial
ERI2	Eriogonum spp.	Eriogonum	Forb	
ERMI	Eriogonum microthecum	Slenderbrush eriogonum	Forb	Perennial
EROV	Eriogonum ovalifolium	Cushion eriogonum	Forb	Perennial
ERPU	Erigeron pumilus	Fleabane	Forb	Perennial
EULA	Eurotia lanata	Winterfat	Half-shrub	Perennial
EUSE	Euphorbia serphyllifolia	Thyme-leaved spurge	Forb	Annual
FEOC	Festuca octoflora	Sixweek fescue	Grass	Annual
GACO	Gaura coccinea	Scarlet gaura	Forb	Perennial
GIL	Gilia spp.	Gilia	Forb	Annual
GILE	Gilia leptomeria	Gilia	Forb	Annual
GIPU	Gilia pumila	Gilia	Forb	Annual
GISP	Gilia spicata	Spike gilia	Forb	Perennial

Code	Genus - Species	Common Name	Life Form	Longevity
GUSA	Gutierrezia sarothrae	Broom snakeweed	Half-shrub	Perennial
HAAC	Haplopappus acaulis	Stemless goldenweed	Forb	Perennial
HAGL	Halogeton glomeratus	Halogeton	Forb	Annual
HEAN	Helianthus annuus	Annual sunflower	Forb	Annual
HOPU	Hordeum pusillum	Little barley	Grass	Annual
HYAC	Hymenoxys acaulis	Stemless hymenoxys	Forb	Perennial
JUSC	Juniperus scopulorum	Rocky Mt. red cedar	Shrub	Perennial
KOCR	Koeleria cristata	Junegrass	Grass	Perennial
KOSC	Kochia scoparia	Fireweed	Forb	Annual
LAC	Lactuca spp.	Lettuce	Forb	Annual
LARE	Lappula redowskii	Stickseed	Forb	Annual
LATE	Lappula texana	Stickseed	Forb	Annual
LEAL	Lesquerella alpina	Alkaline bladderpod	Forb	Perennial
LEDE	Lepidium densiflorum	Prairie pepperweed	Forb	Annual
LEPE	Lepidium perfoliatum	Clasping pepperweed	Forb	Annual
LEPU	Leptodactylon pungens	Granite gilia	Forb	Perennial
LERE	Lewisia rediviva	Bitterroot	Forb	Perennial
LES	Lesquerella spp.	Bladderpod	Forb	Perennial
LOOR	Lomatium orientale	Eastern lomatium	Forb	Perennial
LUPU	Lupinus pusillus	Rusty lupine	Forb	Annual
LYG	Lygodesmia spp.	Skeletonplant	Forb	
MATA	Machaeranthera tanacetifolia	Aster	Forb	Annual
MUDI	Musineon divaricatum	Falsecarrot	Forb	Perennial
MUSQ	Munroa squarrosa	False buffalograss	Grass	Annual
OECA	Oenothera caespitosa	Tufted eveningprimrose	Forb	Perennial
OEN	Oenothera spp.	Eveningprimrose	Forb	
OESC	Oenothera scapoidea	Eveningprimrose	Forb	Annual
OPPO	Opuntia polyacantha	Plains pricklypear	Forb	Perennial
ORHY	Oryzopsis hymenoides	Indian ricegrass	Grass	Perennial
ORO	Orobanche spp.	Broomrape	Forb	
PASE	Paronychia sessiliflora	Stemless nailwort	Forb	Perennial
PEAL	Penstemon albertinus	Alberta penstemon	Forb	Perennial
PEN	Penstemon spp.	Penstemon	Forb	Perennial
PHAU	Physaria australis	Twinpod	Forb	Perennial
PHHO	Phlox hoodii	Hood's phlox	Forb	Perennial
PHL	Phlox spp.	Phlox	Forb	
PLPA	Plantago patagonica	Wooly indianwheat	Forb	Annual
PLSP	Plantago spinescens	Spiny indianwheat	Forb	Annual
POAV	Polygonum aviculare	Prostrate knotweed	Forb	Annual
POFE	Poa fendleriana	Muttongrass	Grass	Perennial
POSE	Poa secunda	Sandberg bluegrass	Grass	Perennial
SAKA	Salsola kali	Russian thistle	Forb	Annual
SAVE	Sarcobatus vermiculatus	Greasewood	Shrub	Perennial
SIHY	Sitanion hystrix	Squirreltail bottlebrush	Grass	Perennial
SILI	Sisymbrium linifolium	Tumblemustard	Forb	Annual
SIS	Sisymbrium spp.	Tumblemustard	Forb	Annual
SPAI	Sporobolus airoides	Alkali sacaton	Grass	Perennial
SPCO	Spaeralcea coccinea	Scarlet globemallow	Forb	Perennial
SPCR	Sporobolus cryptandrus	Sand dropseed	Grass	Perennial
STCO	Stipa comata	Needleandthread	Grass	Perennial
STI	Stipa spp.	Needlegrass	Grass	Perennial
SYM	Symphoricarpos spp.	Buckbrush	Shrub	Perennial

605A	<i>Quercus laevis</i>	Brown oaks	Tree	Perennial
605B	<i>Quercus prinus</i>	White oaks	Tree	Perennial
605C	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605D	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605E	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605F	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605G	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605H	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605I	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605J	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605K	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605L	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605M	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605N	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605O	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605P	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605Q	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605R	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605S	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605T	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605U	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605V	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605W	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605X	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605Y	<i>Quercus sp.</i>	White oaks	Tree	Perennial
605Z	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606A	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606B	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606C	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606D	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606E	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606F	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606G	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606H	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606I	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606J	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606K	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606L	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606M	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606N	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606O	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606P	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606Q	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606R	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606S	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606T	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606U	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606V	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606W	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606X	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606Y	<i>Quercus sp.</i>	White oaks	Tree	Perennial
606Z	<i>Quercus sp.</i>	White oaks	Tree	Perennial

Code	Genus - Species	Common Name	Life Form	Longevity
TAOF	Taraxacum officinale	Common dandelion	Forb	Perennial
TECA	Tetradymia canescens	Gray horsebrush	Shrub	Perennial
TRA	Tragopogon spp.	Salsify	Forb	
TRDU	Tragopogon dubius	Salsify	Forb	Biennial
TRI	Trifolium spp.	Clover	Forb	
UNK	Unknown spp.			
VIAM	Vicia americana	American vetch	Forb	Perennial
VIO	Violaceae	Violet family	Forb	Perennial
VIVA	Viola vallicola	Nuttall violet	Forb	Perennial
ZYG	Zygadenus spp.	Death camas	Forb	Perennial

Code	Genus - Species	Common Name	Life Zone	Longevity
TAOF	Taraxacum officinale	Common dandelion	Forest	Perennial
TECH	Taraxacum officinale	Gray dandelion	Forest	Perennial
TRA	Taraxacum spp.	Salix	Forest	
TRH	Taraxacum spp.	Salix	Forest	Biennial
TRI	Taraxacum spp.	Clover	Forest	
TRV	Taraxacum spp.			
VIAM	Vicia americana	American vetch	Forest	Perennial
VIO	Vicia spp.	Vicia family	Forest	Perennial
VEVA	Vicia villosa	Woolly vetch	Forest	Perennial
VYC	Vicia spp.	Beet vetch	Forest	Perennial

Table II. An alphabetical listing of study area, the county where each occurs and the treatments studied in each area.

County Name				
Code	Exclosure Name	County	Treatment	
1001	Ant Erad. Lander Exc.	Fremont	Inside	Native
			Outside	Native
1002	Boysen Reservoir Exc.	Fremont	Inside	Native
			Outside	Native
1003	Lower Gov't Draw Exc.	Fremont	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
1004	McGraw Flat Exc.	Fremont	Inside	Native
			Outside	Native
1005	Sweetwater Exc.	Fremont	Inside	Native
			Outside	Native
1006	Upper Gov't Draw Exc.	Fremont	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
1007	Granite Mountain Exc.	Fremont	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
2002	Buffalo Creek Exc.	Washakie	Inside	Native
			Outside	Native
2003	Burnt Wagon Exc.	Washakie	Inside	Native
			Outside	Native
2004	Demer Exc.	Washakie	Inside	Native
			Outside	Native
2005	Dutch Nick Flat Exc.	Washakie	Inside	Native
			Outside	Native
2006	West Pasture Exc.	Washakie	Inside	Native
			Outside	Native
2007	Bud Kimball Exc.	Washakie	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
2009	Smilo Exc.	Washakie	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
2010	Two Mile Hill Exc.	Washakie	Inside	Native
			Outside	Native
1501	Cochran Exc.	Hot Springs	Inside	Native
			Inside	Spray
			Inside	Pitted
			Inside	Cultivated
			Outside	Native
			Outside	Spray

(continued)

County Name				
Code	Exclosure Name	County	Treatment	
1502	Kirby Creek Ex.	Hot Springs	Inside	Native
			Outside	Native
1503	North Butte Relic Area (Thermopolis)	Hot Springs		
1504	Round Top Relic Area	Hot Springs		
1505	Sand Gulch Exc.	Hot Springs	Inside	Native
			Outside	Native
0901	Halogeton Pasture #1	Big Horn	Inside	Native
0902	Halogeton Pasture #2	Big Horn	Inside	Native
0903	Halogeton Pasture #3	Big Horn	Inside	Native
0904	Halogeton Pasture #1	Big Horn	Outside	Native
0905	Halogeton Pasture #2	Big Horn		
0907	Halogeton Pasture #4a	Big Horn		
0908	Halogeton Pasture #4b	Big Horn		
0909	Halogeton Pasture #5	Big Horn		
0910	Halogeton Pasture #6	Big Horn		
0911	Halogeton Pasture #7a	Big Horn		
0912	Halogeton Pasture #7b	Big Horn		
0913	Horse Creek Exc.	Big Horn	Inside	AGSM
			Inside	AGSP
			Outside	AGSM
			Outside	AGSP
0404	Farson Exc.	Sweetwater	Inside	Native
			Outside	Native
1901	Cumberland Exc. #1	Uinta	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
1902	Cumberland Exc. #4	Uinta	Inside	Native
			Outside	Native
1201	Cumberland Exc. #2	Lincoln	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray
1202	Cumberland Exc. #3	Lincoln	Inside	Native
			Inside	Spray
			Outside	Native
			Outside	Spray

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES.
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Ant Eradi- cation Lander Inside Native 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20 /sq.ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	135.00	6.75	----	13				
CAEL	.70	.04	2.09	3	.36	.12	.51	1.73
BOGR	1.00	.05	2.62	1	.26	.26	.26	1.25
STCO	4.50	.23	12.04	3	6.43	2.14	1.43	30.86
POSE	13.00	.65	34.04	14	7.99	.57	.61	38.35
AGSM	15.20	.76	39.79	20	29.06	1.45	1.91	139.49
SIHY	.50	.03	1.57	1	.17	.17	.34	.82
ANNUAL								
FORBS	2.50	----	----	15	6.79	.45	2.72	32.59
PLPA	2.00	.10	5.24	12				
GILIA								
SPP.	.10	.01	.52	1				
LEDE	.40	.02	1.05	4				
PERENNIAL								
FORBS	.30	----	----	3	.20	.07	.67	.96
SPCO	.20	.01	.52	2				
ERPU	.10	.01	.52	1				
*OPPO	32.00	1.60	----	2				
TOTAL		1.91	100.00		51.26			246.05
*Not computed	in percent composition							

Precipitation Data:

R. G. #5 - Ant Eradication Exc. Lander
 October 15 to April 15 = 1.37
 April 15 to July 1 = 6.21
 July 1 to September 1 = .29
 September 1 to October 15 = 1.14
 Season Total = 9.01
 Long Term Average = 8.22

MEASUREMENTS AND CALCULATIONS FOR THE STUDY OF THE EFFECTS OF THE VARIOUS FACTORS ON THE GROWTH OF THE PLANTS

Table 1. Results of the measurements and calculations for the study of the effects of the various factors on the growth of the plants.

Factor	Measurement	Calculation	Result	Conclusion
Light	1.0	1.0	1.0	Light is essential for growth.
Water	2.0	2.0	2.0	Water is essential for growth.
Temperature	3.0	3.0	3.0	Temperature is essential for growth.
Humidity	4.0	4.0	4.0	Humidity is essential for growth.
Soil	5.0	5.0	5.0	Soil is essential for growth.
CO2	6.0	6.0	6.0	CO2 is essential for growth.
Minerals	7.0	7.0	7.0	Minerals are essential for growth.
Acidity	8.0	8.0	8.0	Acidity is essential for growth.
Salinity	9.0	9.0	9.0	Salinity is essential for growth.
Trace elements	10.0	10.0	10.0	Trace elements are essential for growth.
Plant hormones	11.0	11.0	11.0	Plant hormones are essential for growth.
Genetics	12.0	12.0	12.0	Genetics are essential for growth.
Pathogens	13.0	13.0	13.0	Pathogens are essential for growth.
Pests	14.0	14.0	14.0	Pests are essential for growth.
Harvest	15.0	15.0	15.0	Harvest is essential for growth.

Table 2. Results of the measurements and calculations for the study of the effects of the various factors on the growth of the plants.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Ant Eradication Lander Outside Native 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20 /sq.ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	177.00	8.85	----	11				
AGSM	14.90	.75	25.00	18	22.58	1.25	1.52	108.38
ORHY	2.50	.13	4.33	3	3.23	1.08	1.29	15.50
BOGR	23.00	1.15	38.34	3	5.99	2.00	.26	28.75
POSE	13.00	.65	21.67	11	3.95	.36	.30	18.96
STCO	1.00	.05	1.67	2	.99	.50	.99	4.75
ANNUAL FORBS	4.80	----	----	13	9.09	.70	1.89	43.63
DEPI	.10	.01	.33	1				
PLPA	3.60	.18	6.00	10				
LEDE	.70	.04	1.33	7				
CHAL	.20	.01	.33	2				
GILIA SPP.	.20	.01	.33	2				
PERENNIAL FORBS	.40	----	----	4	.41	.10	1.03	1.97
*OPPO	26.00	1.30	----	3				
SPCO	.40	.02	.67	4				
*PHHO	3.00	.15	----	2				
TOTAL		3.00	100.00		46.24			221.94
*Not computed in percent composition								

Precipitation Data:

R. G. #5 - Ant Eradication Exc. Lander
 October 15 to April 15 = 1.37
 April 15 to July 1 = 6.21
 July 1 to September 1 = .29
 September 1 to October 15 = 1.14
 Season Total = 9.01
 Long Term Average = 8.22

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Boysen Exclosure Inside Native 7/28/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20 /sq.ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
BOGR	119.00	5.95	94.89	20	68.36	3.42	.57	328.13
SPCR	2.50	.13	2.07	2	1.38	.69	.55	6.62
ANNUAL FORBS	2.40	----	----	9	4.84	.54	2.02	23.23
CLSE	1.20	.06	.96	3				
HAGL	.90	.05	.80	5				
CHAL	.10	.01	.16	1				
EUSE	.20	.01	.16	2				
PERENNIAL FORBS	1.00	----	----	6	9.56	1.59	9.56	45.89
SPCO	.30	.02	.32	3				
AST	.70	.04	.64	3				
TOTAL		6.27	100.00		84.14			403.87
*Not computed in percent composition								

Precipitation Data:

R. G. # 10 - Boysen Reservoir
 October 15 to April 15 = .87
 April 15 to July 1 = 5.19
 July 1 to September 1 = .25
 September 1 to October 15 = 1.24
 Season Total = 7.55
 Long Term Average = 4.78

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Boysen Exclosure Outside Native 7/28/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
BOGR	77.10	3.86	87.12	17	44.95	2.64	.58	215.76
SPCR	.50	.03	.68	1	.11	.11	.22	.53
MUSQ	.50	.03	.68	5	.32	.06	.64	1.54
ANNUAL FORBS	3.30	----	----	14	20.44	1.46	6.19	98.11
MATA	.10	.01	.23	1				
ATAR	1.00	.05	1.13	2				
HAGL	1.40	.07	1.58	6				
LATE	.10	.01	.23	1				
EUSE	.70	.04	.90	7				
PERENNIAL FORBS	6.50	----	----	16	19.80	1.24	3.05	95.04
SPCO	1.80	.09	2.03	6				
AST	4.70	.24	5.42	12				
*OPPO	11.10	.56	----	3				
TOTAL		4.43	100.00		85.62			410.98
*Not computed in percent composition								

Precipitation Data:

R. G. #10 - Boysen Reservoir
 October 15 to April 15 = .87
 April 15 to July 1 = 5.19
 July 1 to September 1 = .25
 September 1 to October 15 = 1.24
 Season Total = 7.55
 Long Term Average = 4.78

REPORT ON THE INVESTIGATION OF THE CAUSE OF THE FLOODING OF THE RIVER IN THE AREA OF THE DAM

Page 1 of 1

Report prepared by the Engineer

Station	Distance from Dam	Water Level (ft)	Flow (cfs)	Velocity (ft/sec)	Channel Width (ft)	Channel Depth (ft)	Channel Slope	Channel Material	Channel Condition
1	0	10.0	100	1.0	10	10	1:1	Gravel	Good
2	10	10.5	110	1.1	11	11	1:1	Gravel	Good
3	20	11.0	120	1.2	12	12	1:1	Gravel	Good
4	30	11.5	130	1.3	13	13	1:1	Gravel	Good
5	40	12.0	140	1.4	14	14	1:1	Gravel	Good
6	50	12.5	150	1.5	15	15	1:1	Gravel	Good
7	60	13.0	160	1.6	16	16	1:1	Gravel	Good
8	70	13.5	170	1.7	17	17	1:1	Gravel	Good
9	80	14.0	180	1.8	18	18	1:1	Gravel	Good
10	90	14.5	190	1.9	19	19	1:1	Gravel	Good
11	100	15.0	200	2.0	20	20	1:1	Gravel	Good
12	110	15.5	210	2.1	21	21	1:1	Gravel	Good
13	120	16.0	220	2.2	22	22	1:1	Gravel	Good
14	130	16.5	230	2.3	23	23	1:1	Gravel	Good
15	140	17.0	240	2.4	24	24	1:1	Gravel	Good
16	150	17.5	250	2.5	25	25	1:1	Gravel	Good
17	160	18.0	260	2.6	26	26	1:1	Gravel	Good
18	170	18.5	270	2.7	27	27	1:1	Gravel	Good
19	180	19.0	280	2.8	28	28	1:1	Gravel	Good
20	190	19.5	290	2.9	29	29	1:1	Gravel	Good
21	200	20.0	300	3.0	30	30	1:1	Gravel	Good
22	210	20.5	310	3.1	31	31	1:1	Gravel	Good
23	220	21.0	320	3.2	32	32	1:1	Gravel	Good
24	230	21.5	330	3.3	33	33	1:1	Gravel	Good
25	240	22.0	340	3.4	34	34	1:1	Gravel	Good
26	250	22.5	350	3.5	35	35	1:1	Gravel	Good
27	260	23.0	360	3.6	36	36	1:1	Gravel	Good
28	270	23.5	370	3.7	37	37	1:1	Gravel	Good
29	280	24.0	380	3.8	38	38	1:1	Gravel	Good
30	290	24.5	390	3.9	39	39	1:1	Gravel	Good
31	300	25.0	400	4.0	40	40	1:1	Gravel	Good
32	310	25.5	410	4.1	41	41	1:1	Gravel	Good
33	320	26.0	420	4.2	42	42	1:1	Gravel	Good
34	330	26.5	430	4.3	43	43	1:1	Gravel	Good
35	340	27.0	440	4.4	44	44	1:1	Gravel	Good
36	350	27.5	450	4.5	45	45	1:1	Gravel	Good
37	360	28.0	460	4.6	46	46	1:1	Gravel	Good
38	370	28.5	470	4.7	47	47	1:1	Gravel	Good
39	380	29.0	480	4.8	48	48	1:1	Gravel	Good
40	390	29.5	490	4.9	49	49	1:1	Gravel	Good
41	400	30.0	500	5.0	50	50	1:1	Gravel	Good
42	410	30.5	510	5.1	51	51	1:1	Gravel	Good
43	420	31.0	520	5.2	52	52	1:1	Gravel	Good
44	430	31.5	530	5.3	53	53	1:1	Gravel	Good
45	440	32.0	540	5.4	54	54	1:1	Gravel	Good
46	450	32.5	550	5.5	55	55	1:1	Gravel	Good
47	460	33.0	560	5.6	56	56	1:1	Gravel	Good
48	470	33.5	570	5.7	57	57	1:1	Gravel	Good
49	480	34.0	580	5.8	58	58	1:1	Gravel	Good
50	490	34.5	590	5.9	59	59	1:1	Gravel	Good
51	500	35.0	600	6.0	60	60	1:1	Gravel	Good
52	510	35.5	610	6.1	61	61	1:1	Gravel	Good
53	520	36.0	620	6.2	62	62	1:1	Gravel	Good
54	530	36.5	630	6.3	63	63	1:1	Gravel	Good
55	540	37.0	640	6.4	64	64	1:1	Gravel	Good
56	550	37.5	650	6.5	65	65	1:1	Gravel	Good
57	560	38.0	660	6.6	66	66	1:1	Gravel	Good
58	570	38.5	670	6.7	67	67	1:1	Gravel	Good
59	580	39.0	680	6.8	68	68	1:1	Gravel	Good
60	590	39.5	690	6.9	69	69	1:1	Gravel	Good
61	600	40.0	700	7.0	70	70	1:1	Gravel	Good
62	610	40.5	710	7.1	71	71	1:1	Gravel	Good
63	620	41.0	720	7.2	72	72	1:1	Gravel	Good
64	630	41.5	730	7.3	73	73	1:1	Gravel	Good
65	640	42.0	740	7.4	74	74	1:1	Gravel	Good
66	650	42.5	750	7.5	75	75	1:1	Gravel	Good
67	660	43.0	760	7.6	76	76	1:1	Gravel	Good
68	670	43.5	770	7.7	77	77	1:1	Gravel	Good
69	680	44.0	780	7.8	78	78	1:1	Gravel	Good
70	690	44.5	790	7.9	79	79	1:1	Gravel	Good
71	700	45.0	800	8.0	80	80	1:1	Gravel	Good
72	710	45.5	810	8.1	81	81	1:1	Gravel	Good
73	720	46.0	820	8.2	82	82	1:1	Gravel	Good
74	730	46.5	830	8.3	83	83	1:1	Gravel	Good
75	740	47.0	840	8.4	84	84	1:1	Gravel	Good
76	750	47.5	850	8.5	85	85	1:1	Gravel	Good
77	760	48.0	860	8.6	86	86	1:1	Gravel	Good
78	770	48.5	870	8.7	87	87	1:1	Gravel	Good
79	780	49.0	880	8.8	88	88	1:1	Gravel	Good
80	790	49.5	890	8.9	89	89	1:1	Gravel	Good
81	800	50.0	900	9.0	90	90	1:1	Gravel	Good
82	810	50.5	910	9.1	91	91	1:1	Gravel	Good
83	820	51.0	920	9.2	92	92	1:1	Gravel	Good
84	830	51.5	930	9.3	93	93	1:1	Gravel	Good
85	840	52.0	940	9.4	94	94	1:1	Gravel	Good
86	850	52.5	950	9.5	95	95	1:1	Gravel	Good
87	860	53.0	960	9.6	96	96	1:1	Gravel	Good
88	870	53.5	970	9.7	97	97	1:1	Gravel	Good
89	880	54.0	980	9.8	98	98	1:1	Gravel	Good
90	890	54.5	990	9.9	99	99	1:1	Gravel	Good
91	900	55.0	1000	10.0	100	100	1:1	Gravel	Good
92	910	55.5	1010	10.1	101	101	1:1	Gravel	Good
93	920	56.0	1020	10.2	102	102	1:1	Gravel	Good
94	930	56.5	1030	10.3	103	103	1:1	Gravel	Good
95	940	57.0	1040	10.4	104	104	1:1	Gravel	Good
96	950	57.5	1050	10.5	105	105	1:1	Gravel	Good
97	960	58.0	1060	10.6	106	106	1:1	Gravel	Good
98	970	58.5	1070	10.7	107	107	1:1	Gravel	Good
99	980	59.0	1080	10.8	108	108	1:1	Gravel	Good
100	990	59.5	1090	10.9	109	109	1:1	Gravel	Good
101	1000	60.0	1100	11.0	110	110	1:1	Gravel	Good
102	1010	60.5	1110	11.1	111	111	1:1	Gravel	Good
103	1020	61.0	1120	11.2	112	112	1:1	Gravel	Good
104	1030	61.5	1130	11.3	113	113	1:1	Gravel	Good
105	1040	62.0	1140	11.4	114	114	1:1	Gravel	Good
106	1050	62.5	1150	11.5	115	115	1:1	Gravel	Good
107	1060	63.0	1160	11.6	116	116	1:1	Gravel	Good
108	1070	63.5	1170	11.7	117	117	1:1	Gravel	Good
109	1080	64.0	1180	11.8	118	118	1:1	Gravel	Good
110	1090	64.5	1190	11.9	119	119	1:1	Gravel	Good
111	1100	65.0	1200	12.0	120	120	1:1	Gravel	Good
112	1110	65.5	1210	12.1	121	121	1:1	Gravel	Good
113	1120	66.0	1220	12.2	122	122	1:1	Gravel	Good
114	1130	66.5	1230	12.3	123	123	1:1	Gravel	Good
115	1140	67.0	1240	12.4	124	124	1:1	Gravel	Good
116	1150	67.5	1250	12.5	125	125	1:1	Gravel	Good
117	1160	68.0	1260	12.6	126	126	1:1	Gravel	Good
118	1170	68.5	1270	12.7	127	127	1:1	Gravel	Good
119	1180	69.0	1280	12.8	128	128	1:1	Gravel	Good
120	1190	69.5	1290	12.9	129	129	1:1	Gravel	Good
121	1200	70.0	1300	13.0	130	130	1:1	Gravel	Good
122	1210	70.5	1310	13.1	131	131	1:1	Gravel	Good
123	1220	71.0	1320	13.2	132	132	1:1	Gravel	Good
124	1230	71.5	1330	13.3	133	133	1:1	Gravel	Good
125	1240	72.0	1340	13.4	134	134	1:1	Gravel	Good
126	1250	72.5	1350	13.5	135	135	1:1	Gravel	Good
127	1260	73.0	1360	13.6	136	136	1:1	Gravel	Good
128	1270	73.5	1370	13.7	137	137	1:1	Gravel	Good
129	1280	74.0	1380	13.8	138	138	1:1	Gravel	Good
130	1290	74.5	1390	13.9	139	139	1:1	Gravel	Good
131	1300	75.0	1400	14.0	140	140	1:1	Gravel	Good
132	1310	75.5	1410	14.1	141	141	1:1	Gravel	Good
133	1320	76.0	1420	14.2	142	142	1:1	Gravel	Good
134	1330	76.5	1430	14.3	143	143	1:1	Gravel	Good
135	1340	77.0	1440	14.4	144	144	1:1	Gravel	Good
136	1350	77.5	1450	14.5	145	145	1:1	Gravel	Good
137	1360	78.0	1460	14.6	146	146	1:1	Gravel	Good
138	1370	78.5	1470	14.7	147	147	1:1	Gravel	Good
139	1380	79.0	1480	14.8	148	148	1:1	Gravel	Good
140	1390	79.5	1490	14.9	149	149	1:1	Gravel	Good
141	1400	80.0	1500	15.0	150	150	1:1	Gravel	Good
142	1410	80.5	1510	15.1	151	151	1:1	Gravel	Good
143	1420	81.0	1520	15.2	152	152	1:1	Gravel	Good
144	1430	81.5	1530	15.3	153	153	1:1	Gravel	Good
145	1440	82.0	1540	15.4	154	154	1:1	Gravel	Good
146	1450	82.5	1550	15.5	155	155	1:1		

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Bud Kimball Inside Native 7/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	224.70	11.24	----	13				
POSE	12.60	.63	46.32	17	5.32	.31	.42	25.54
AGSM	3.20	.16	11.76	10	10.84	1.08	3.39	52.03
SIHY	.60	.03	2.21	2	1.44	.72	2.40	6.91
FEOC	.10	.01	.74	1	.01	.01	.10	.05
ANNUAL FORBS	9.30	----	----	20	65.06	3.25	7.00	312.29
DEPI	1.00	.05	3.68	10				
LEDE	1.90	.10	7.35	15				
PLSP	6.40	.32	23.53	19				
PERENNIAL FORBS	1.10	----	----	3	.44	.15	.40	2.11
LERE	1.10	.06	4.41	3				
*PHHO	2.30	.12	----	4				
*OPPO	25.00	1.25	----	2				
TOTAL		1.36	100.00		83.11			398.93
*Not computed in percent composition								

Precipitation Data:

R. G. #41 - Bud Kimball Exc.

October 15 to April 15 = 2.60

April 15 to July 1 = 6.50

July 1 to September 1 = 1.12

September 1 to October 15 = 2.00

Season Total = 12.22

Long Term Average = 9.18

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Bud Kimball Outside Native 7/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	236.00	11.80	----	10				
FEOC	.10	.01	.46	1	.32	.32	3.20	1.54
AGSM	2.80	.14	6.39	16	11.60	.73	4.14	55.68
SIHY	.10	.01	.46	1	.50	.50	5.00	2.40
POSE	32.40	1.62	73.96	19	13.95	.73	.43	66.96
ANNUAL FORBS	7.30	----	----	20	44.65	2.23	6.12	214.32
PLSP	2.00	.10	4.57	16				
DEPI	1.20	.06	2.74	12				
LEDE	1.60	.08	3.65	16				
GIPU	.10	.01	.46	1				
UNK	2.40	.12	5.48	16				
PERENNIAL FORBS	.50	----	----	4	1.56	.39	3.12	7.49
LERE	.30	.02	.91	3				
LOOR	.10	.01	.46	1				
ERI	.10	.01	.46	1				
*PHHO	24.00	1.20	----	6				
*OPPO	21.00	1.05	----	3				
TOTAL		2.19	100.00		72.58			348.39
*Not computed in percent composition								

Precipitation Data:

R. G. #41 - Bud Kimball Exc.

October 15 to April 15 = 2.60

April 15 to July 1 = 6.50

July 1 to September 1 = 1.12

September 1 to October 15 = 2.00

Season Total = 12.22

Long Term Average = 9.18

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Bud Kimball Inside Sprayed 7/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F E	Wgt./ Unit Basal Area F E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	9.00	.45	----	1				
AGSM	12.50	.63	25.52	19	96.21	5.06	7.70	461.81
POSE	16.80	.84	34.02	17	10.65	.63	.63	51.12
SIHY	8.00	.40	16.19	4	25.29	6.32	3.16	121.39
STCO	2.10	.11	4.45	2	25.46	12.73	12.12	122.21
ANNUAL FORBS	9.20	----	----	20	89.09	4.45	9.68	427.63
PLSP	2.30	.12	4.86	11				
DEPI	1.80	.09	3.64	14				
LEDE	1.20	.06	2.43	12				
LARE	.60	.03	1.21	6				
LAC	.30	.02	.81	3				
UNK	3.00	.15	6.07	18				
PERENNIAL FORBS	.20	----	----	2	.80	.40	4.00	3.84
LOOR	.10	.01	.40	1				
LERE	.10	.01	.40	1				
*PHHO	1.00	.05	----	1				
*OPPO	92.00	4.60	----	4				
TOTAL		2.47	100.00		247.50			1188.00
*Not computed in percent composition								

Precipitation Data:

R. G. #41 - Bud Kimball Exc.
 October 15 to April 15 = 2.60
 April 15 to July 1 = 6.50
 July 1 to September 1 = 1.12
 September 1 to October 15 = 2.00
 Season Total = 12.22
 Long Term Average = 9.18

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Bud Kimball Outside Sprayed 7/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
POSE	13.20	4.66	28.70	11	6.77	.62	.51	32.50
AGSM	8.90	.45	19.57	20	49.16	2.46	5.52	235.97
FEOC	1.00	.05	2.17	10	1.25	1.13	1.25	6.00
BRTE	.20	.01	.14	2	.70	.35	3.50	3.36
ANNUAL	46.10	2.31	32.09	20	17.33	.87	.38	83.18
FORBS	22.40	---	---	19	159.94	8.42	7.14	767.71
PLSP	20.10	1.01	43.92	19	76.66	4.51	1.67	367.97
DEPI	.30	.02	.87	3				
CHALAL	.10	.01	.43	1				
LEDEBS	6.60	.01	1.30	16	18.49	.97	2.76	88.75
GIL	1.30	.02	1.87	13				
UNK	1.00	.05	2.17	16				
DEPI	.80	.04	.56	8				
PERENNIAL	.10	.01	.14	1				
LAR FORBS	---	---	---	3				
*OPPO	6.00	.30	---	1				
PERENNIAL								
TOTAL FORBS	1.20	2.30	100.00	7	217.12	.68	3.99	1042.18
SPCO	.50	.03	.42	5				
*Not computed in percent composition				1				
CRE	.50	.03	.42	1				
*OPPO	18.10	.91	---	3				
*PHHO	6.00	.30	---	4				
MUDI	.10	.01	.14	1				
TOTAL		7.20	100.00		157.18			754.46

*Not computed in percent composition

R. G. #41 - Bud Kimball Exc.

October 15 to April 15 = 2.60

April 15 to July 1 = 6.50

July 1 to September 1 = 1.12

September 1 to October 15 = 2.00

Season Total = 12.22

Long Term Average = 9.18

Season Total = 16.56

Long Term Average = 9.95

No. 20

Plot Size 1 x 1

Cover Determined by Area Estimate

Plot	Absolute Plot Frequency % Base 20	Total Weight Gms/20 Sp. ft.	Average Weight Per Plot Occur- ences F ÷ E	Wgt. Unit Basal Area F ÷ E	Pounds Per Acres F x 4.8
OPRO	1.00	1.00	1.00	1.00	4.80
LEDR	1.00	1.00	1.00	1.00	4.80
CHAL	1.00	1.00	1.00	1.00	4.80
DEPT	1.00	1.00	1.00	1.00	4.80
ELSP	1.00	1.00	1.00	1.00	4.80
FORAS	1.00	1.00	1.00	1.00	4.80
ANUN	1.00	1.00	1.00	1.00	4.80
FEOD	1.00	1.00	1.00	1.00	4.80
AGSM	1.00	1.00	1.00	1.00	4.80
POSE	1.00	1.00	1.00	1.00	4.80
TOTAL	10.00	10.00	1.00	1.00	48.00

Registration Data:

R. G. Hall - 1000 10th Ave.

October 13 to April 15

02.3 = 1 710L 31 81 1179A

ST. J. = 1 1/2 - 1 3/4 (1940-41) 1 1/2 (1941-42)

0012 2 24 361450 44 3 154043942

1007 008692

21.0 200,000 100,000 50,000 25,000 12,500 6,250 3,125 1,562 781 391 195 97 48 24 12 6 3 1 0

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Buffalo Creek Inside Native 7/26/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	97.00	4.85	----	5				
EULA	3.00	.15	2.08	1	3.27	3.27	1.09	15.70
AGSM	6.20	.31	4.26	15	20.28	1.35	3.27	97.34
BRTE	.20	.01	.14	2	.70	.35	3.50	3.36
POSE	46.10	2.31	32.09	20	17.33	.87	.38	83.18
BOGR	33.00	1.65	22.93	5	15.66	3.13	.47	75.17
AGSP	46.60	2.33	32.37	17	76.66	4.51	1.67	367.97
ANNUAL FORBS	6.70	----	----	19	18.49	.97	2.76	88.75
LEDE	1.50	.08	1.11	15				
PLSP	3.90	.20	2.78	14				
DEPI	.80	.04	.56	8				
CHAL	.10	.01	.14	1				
LARE	.30	.02	.28	3				
UNK	.10	.01	.14	1				
PERENNIAL FORBS	1.20	----	----	7	4.79	.68	3.99	22.99
SPCO	.50	.03	.42	5				
AST	.10	.01	.14	1				
CRE	.50	.03	.42	1				
*OPPO	18.10	.91	----	3				
*PHHO	6.00	.30	----	4				
MUDI	.10	.01	.14	1				
TOTAL		7.20	100.00		157.18			754.46
*Not computed in percent composition								

Precipitation Data:

R. G. #7 - Buffalo Creek Exc.

October 15 to April 15 = 3.84

April 15 to July 1 = 9.96

July 1 to September 1 = 1.11

September 1 to October 15 = 1.65

Season Total = 16.56

Long Term Average = 9.95

Students are to be prepared to discuss the following questions at the end of each class session.

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Classroom Management System

Student Name	Behavior Points	Academic Points	Attendance Points	Classroom Points	Homework Points	Participation Points	Leadership Points	Total Points
John Doe	10	15	5	20	10	10	5	75
Jane Smith	12	18	8	25	12	15	10	90
Mike Johnson	8	10	3	15	8	10	5	60
Sarah Lee	15	20	10	30	15	20	15	115
David Kim	9	12	4	18	9	12	6	66
Emily White	11	16	6	22	11	14	8	82
Chris Brown	7	9	2	12	7	9	4	53
Alex Green	13	19	9	28	13	16	12	92
Olivia Black	6	8	1	10	6	8	3	42
Benjamin Gray	14	21	11	32	14	18	14	100
Mia Hall	5	7	1	8	5	7	2	35
Ethan King	16	22	12	35	16	20	16	117
Ava Young	4	6	0	6	4	6	1	27
Lucas Adams	17	24	13	38	17	22	18	122
Chloe Baker	3	5	0	4	3	5	0	15
Nathan Clark	18	26	14	40	18	24	20	126
Isabella Evans	2	4	0	3	2	4	0	12
Wyatt Foster	19	28	15	42	19	26	22	134
Madeline Gibson	1	3	0	2	1	3	0	7
James Hill	20	30	16	45	20	28	24	143
Abigail King	0	2	0	1	0	2	0	3
Isaac Knight	21	32	17	48	21	30	26	154
Grace Knight	0	1	0	0	0	1	0	1
Samuel Knight	22	34	18	50	22	32	28	164
Victoria Knight	0	0	0	0	0	0	0	0
Benjamin Knight	23	36	19	52	23	34	30	175
Charlotte Knight	0	0	0	0	0	0	0	0
Isaac Knight	24	38	20	54	24	36	32	186
Amelia Knight	0	0	0	0	0	0	0	0
Samuel Knight	25	40	21	56	25	38	34	197
Harriet Knight	0	0	0	0	0	0	0	0
Isaac Knight	26	42	22	58	26	40	36	208
Elizabeth Knight	0	0	0	0	0	0	0	0
Isaac Knight	27	44	23	60	27	42	38	219
Robert Knight	0	0	0	0	0	0	0	0
Isaac Knight	28	46	24	62	28	44	40	230
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	29	48	25	64	29	46	42	241
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	30	50	26	66	30	48	44	252
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	31	52	27	68	31	50	46	263
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	32	54	28	70	32	52	48	274
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	33	56	29	72	33	54	50	285
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	34	58	30	74	34	56	52	296
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	35	60	31	76	35	58	54	307
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	36	62	32	78	36	60	56	318
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	37	64	33	80	37	62	58	329
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	38	66	34	82	38	64	60	340
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	39	68	35	84	39	66	62	351
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	40	70	36	86	40	68	64	362
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	41	72	37	88	41	70	66	373
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	42	74	38	90	42	72	68	384
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	43	76	39	92	43	74	70	395
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	44	78	40	94	44	76	72	406
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	45	80	41	96	45	78	74	417
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	46	82	42	98	46	80	76	428
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	47	84	43	100	47	82	78	439
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	48	86	44	102	48	84	80	450
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	49	88	45	104	49	86	82	461
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	50	90	46	106	50	88	84	472
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	51	92	47	108	51	90	86	483
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	52	94	48	110	52	92	88	494
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	53	96	49	112	53	94	90	505
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	54	98	50	114	54	96	92	516
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	55	100	51	116	55	98	94	527
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	56	102	52	118	56	100	96	538
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	57	104	53	120	57	102	98	549
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	58	106	54	122	58	104	100	560
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	59	108	55	124	59	106	102	571
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	60	110	56	126	60	108	104	582
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	61	112	57	128	61	110	106	593
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	62	114	58	130	62	112	108	604
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	63	116	59	132	63	114	110	615
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	64	118	60	134	64	116	112	626
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	65	120	61	136	65	118	114	637
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	66	122	62	138	66	120	116	648
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	67	124	63	140	67	122	118	659
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	68	126	64	142	68	124	120	670
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	69	128	65	144	69	126	122	681
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	70	130	66	146	70	128	124	692
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	71	132	67	148	71	130	126	703
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	72	134	68	150	72	132	128	714
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	73	136	69	152	73	134	130	725
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	74	138	70	154	74	136	132	736
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	75	140	71	156	75	138	134	747
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	76	142	72	158	76	140	136	758
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	77	144	73	160	77	142	138	769
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	78	146	74	162	78	144	140	780
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	79	148	75	164	79	146	142	791
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	80	150	76	166	80	148	144	802
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	81	152	77	168	81	150	146	813
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	82	154	78	170	82	152	148	824
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	83	156	79	172	83	154	150	835
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	84	158	80	174	84	156	152	846
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	85	160	81	176	85	158	154	857
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	86	162	82	178	86	160	156	868
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	87	164	83	180	87	162	158	879
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	88	166	84	182	88	164	160	890
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	89	168	85	184	89	166	162	901
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	90	170	86	186	90	168	164	912
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	91	172	87	188	91	170	166	923
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	92	174	88	190	92	172	168	934
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	93	176	89	192	93	174	170	945
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	94	178	90	194	94	176	172	956
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	95	180	91	196	95	178	174	967
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	96	182	92	198	96	180	176	978
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	97	184	93	200	97	182	178	989
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	98	186	94	202	98	184	180	1000
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	99	188	95	204	99	186	182	1011
Isabella Knight	0	0	0	0	0	0	0	0
Isaac Knight	100	190	96	206	100	188		

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Buffalo Creek Outside Native 7/26/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	72.10	3.61	----	7				
AGSM	12.40	.62	9.67	16	39.25	2.45	3.17	188.40
BRTE	1.40	.07	1.09	10	3.26	.33	2.33	15.65
POSE	48.10	2.41	37.59	20	18.88	.94	.39	90.62
BOGR	45.00	2.25	35.10	5	15.49	3.10	.34	74.35
AGSP	8.00	.40	6.24	5	16.92	3.38	2.12	81.22
ANNUAL FORBS	12.30	----	----	19	32.24	1.70	2.62	154.75
LEDE	.80	.04	.62	8				
DEPI	.30	.02	.31	3				
PLSP	10.60	.53	8.27	18				
LARE	.40	.02	.31	4				
CHAL	.10	.01	.16	1				
SIS	.10	.01	.16	1				
PERENNIAL FORBS	.60	----	----	5	.63	.13	1.05	3.02
ALTE	.20	.01	.16	2				
SPCO	.20	.01	.16	2				
AST	.20	.01	.16	2				
*PHHO	2.10	.11	----	2				
*OPPO	14.00	.70	----	2				
TOTAL		6.41	100.00		126.67			608.01
*Not computed in percent composition								

Precipitation Data:

R. G. #7 - Buffalo Creek Exc.

October 15 to April 15 = 3.84

April 15 to July 1 = 9.96

July 1 to September 1 = 1.11

September 1 to October 15 = 1.65

Season Total = 16.56

Long Term Average = 9.95

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Burnt Wagon Inside Native 7/5/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	923.10	4.62	96.23	81	432.16	5.34	.47	207.44
SIHY	5.90	.03	.63	22	1.18	.05	.20	.57
ANNUAL FORBS	21.10	----	----	133	11.96	.09	.57	5.74
CHAL	18.40	.09	1.88	128				
EUSE	1.70	.01	.21	17				
PERENNIAL FORBS	8.70	----	----	71	1.66	.02	.19	.80
ALTE	5.00	.03	.63	46				
MUDI	3.70	.02	.42	33				
TOTAL		4.80	100.00		446.96			214.55
*Not computed in percent composition								

Precipitation Data:

R. G. #17 - Burnt Wagon Exc.

October 15 to April 15 = 1.43

April 15 to July 1 = 4.20

July 1 to September 1 = .35

September 1 to October 15 = 1.96

Season Total = 7.94

Long Term Average = 6.13

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Burnt Wagon Outside Native 7/6/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	1190.40	5.95	97.07	118	654.37	5.55	.55	314.10
ARPE	.60	T	----	2	.01	.01	.02	.01
SIHY	2.20	.01	.16	9	.42	.05	.19	.20
ANNUAL								
FORBS	17.90	----	----	133	19.29	.15	1.08	9.26
CHAL	16.70	.08	1.30	131				
LARE	.10	T	----	1				
EUSE	1.10	.01	.16	11				
PERENNIAL								
FORBS	14.70	----	----	76	9.80	.13	.67	4.70
ALTE	3.40	.02	.33	34				
MUDI	11.30	.06	.98	52				
*OPPO	9.60	.05	----	3				
TOTAL		6.13	100.00		683.89			328.27
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #17 - Burnt Wagon Exc.

October 15 to April 15 = 1.43

April 15 to July 1 = 4.20

July 1 to September 1 = .35

September 1 to October 15 = 1.96

Season Total = 7.94

Long Term Average = 6.13

RESEARCH AND EXPERIMENTAL DATA FROM MINING RESEARCH STUDIES
(WHICH INCLUDES EXPERIMENTAL AND THEORETICAL DATA)

Re. Plate 100

Plate 100 is in

Notes: Determined by Area Balance

Area Square Feet	Local Area Square Feet	Average Percent Area	Percent Area Square Feet	Absolute Area Square Feet	Total Area Square Feet	Average Height Per Foot	Height Per Foot	Weight Per Foot
1	2	3	4	5	6	7	8	9
114.10	1190.40	2.32	97.01	118	118	2.32	2.32	114.10
10.00	10.00	1	1	1	1	1	1	10.00
1.20	1.20	1.01	1.16	1	1	1	1	1.20
17.80	17.80	1.00	1.10	111	111	1.00	1.00	17.80
16.10	16.10	1.00	1.10	111	111	1.00	1.00	16.10
1.10	1.10	1.01	1.16	1	1	1	1	1.10
1.10	1.10	1.01	1.16	1	1	1	1	1.10
14.70	14.70	1.00	1.10	111	111	1.00	1.00	14.70
1.00	1.00	1.00	1.10	111	111	1.00	1.00	1.00
1.00	1.00	1.00	1.10	111	111	1.00	1.00	1.00
1.00	1.00	1.00	1.10	111	111	1.00	1.00	1.00
100.00	100.00	1.12	1.12	100.00	100.00	1.12	1.12	100.00

Notes: Determined by Area Balance
1. 114.10 = Total Area
2. 1190.40 = Total Area
3. 2.32 = Average Height
4. 97.01 = Percent Area
5. 118 = Absolute Area
6. 118 = Total Area
7. 2.32 = Average Height
8. 2.32 = Height Per Foot
9. 114.10 = Weight Per Foot

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Inside Native 7/26/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	246.00	12.30	----	9				
AGSM	15.30	.77	27.39	19	38.17	2.01	2.49	183.22
POSE	27.50	1.38	49.10	18	10.72	.60	.39	51.46
FEOC	.30	.02	.71	3	.06	.02	.20	.29
BRTE	1.90	.10	3.56	10	10.16	1.02	5.35	48.77
STCO	3.50	.18	6.41	2	4.92	2.46	1.41	23.62
ANNUAL FORBS	5.50	----	----	19	10.24	.54	1.86	49.15
DEPI	1.60	.08	2.85	12				
LEDE	1.00	.05	1.78	10				
UNK	.40	.02	.71	4				
PLSP	.80	.04	1.42	8				
CHAL	1.40	.07	2.49	14				
LARE	.20	.01	.36	2				
EUSE	.10	.01	.36	1				
PERENNIAL FORBS	1.30	----	----	9	2.07	.23	1.59	9.94
ALTE	1.00	.05	1.78	6				
*PHHO	5.00	.25	----	2				
*OPPO	15.00	.75	----	3				
MUDI	.10	.01	.36	1				
ERPU	.10	.01	.36	1				
SPCO	.10	.01	.36	1				
TOTAL		2.81	100.00		76.34			366.45
*Not computed in percent composition								

Precipitation Data:

R. G. #76 - Cochran Exc.
 October 15 to April 15 = 2.73
 April 15 to July 1 = 7.89
 July 1 to September 1 = .76
 September 1 to October 15 = 1.38
 Season Total = 12.76
 Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Outside Native 7/27/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	165.00	8.25	----	10				
AGSM	13.90	.70	29.91	20	34.89	1.74	2.51	167.47
POSE	20.60	1.03	44.01	20	7.41	.37	.36	35.57
FEOC	.80	.04	1.71	8	.30	.04	.38	1.44
BRTE	2.00	.10	4.27	16	3.43	.21	1.72	16.46
BOGR	7.00	.35	14.96	2	1.36	.68	.19	6.53
ANNUAL FORBS	1.70	----	----	13	.49	.04	.29	2.35
PLSP	.70	.04	1.71	7				
LEDE	.20	.01	.43	2				
CHAL	.20	.01	.43	2				
LARE	.40	.02	.85	4				
GIL	.10	.01	.43	1				
UNK	.10	.01	.43	1				
PERENNIAL FORBS	.30	----	----	3	.86	.29	2.87	4.13
ALTE	.10	.01	.43	1				
CANU	.20	.01	.43	2				
*OPPO	5.20	.26	----	3				
*PHHO	8.00	.40	----	2				
TOTAL		2.34	100.00		48.74			233.95
*Not computed in percent composition								

Precipitation Data:

R. G. #76 - Cochran Exc.

October 15 to April 15 = 2.73

April 15 to July 1 = 7.89

July 1 to September 1 = .76

September 1 to October 15 = 1.38

Season Total = 12.76

Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Inside Sprayed 7/26/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	290.00	14.50	----	13				
AGSM	22.10	1.11	46.65	19	69.68	3.67	3.15	334.46
BRTE	4.40	.22	9.24	16	30.75	1.92	6.99	147.60
POSE	15.50	.78	32.77	16	5.09	.32	.33	24.43
FEOC	.60	.03	1.26	2	.29	.15	.48	1.39
ANNUAL FORBS	4.10	----	----	18	3.92	.22	.96	18.82
LEDE	1.20	.06	2.52	12				
PLSP	.80	.04	1.68	8				
LARE	.20	.01	.42	2				
DEPI	.60	.03	1.26	6				
CHAL	1.10	.06	2.52	7				
UNK	.20	.01	.42	2				
PERENNIAL FORBS	.50	----	----	1	1.14	1.14	2.28	5.47
ERPU	.50	.03	1.26	1				
*OPPO	12.10	.61	----	2				
TOTAL		2.38	100.00		110.87			532.17
*Not computed in percent composition								

Precipitation Data:

R. G. #76 - Cochran Exc.

October 15 to April 15 = 2.73

April 15 to July 1 = 7.89

July 1 to September 1 = .76

September 1 to October 15 = 1.38

Season Total = 12.76

Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Outside Sprayed 7/27/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
AGSM	7.20	.36	6.86	18	26.52	1.47	3.68	127.30
BRTE	8.00	.40	7.62	20	27.51	1.38	3.44	132.05
POSE	32.20	1.61	30.67	20	8.62	.43	.27	41.38
BOGR	50.20	2.51	47.81	4	12.94	3.24	.26	62.11
FEOC	.20	.01	.19	2	.06	.03	.30	.29
ANNUAL FORBS	6.80	----	----	20	24.26	1.21	3.57	116.45
LARE	.90	.05	.95	9				
PLSP	4.10	.21	4.00	15				
CHAL	.40	.02	.38	4				
LEDE	1.30	.07	1.33	9				
UNK	.10	.01	.19	1				
PERENNIAL FORBS	----	----	----					
*OPPO	.50	.03	----	1				
TOTAL		5.25	100.00		99.91			479.58

*Not computed in percent composition

Precipitation Data:

R. G. #76 - Cochran Exc.
 October 15 to April 15 = 2.73
 April 15 to July 1 = 7.89
 July 1 to September 1 = .76
 September 1 to October 15 = 1.38
 Season Total = 12.76
 Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plot Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Inside Cultivated 7/27/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	239.00	11.95	----	8				
AGSM	15.40	.77	32.36	18	42.17	2.34	2.74	202.42
BRTE	6.00	.30	12.61	18	21.70	1.21	3.62	104.16
POSE	15.10	.76	31.93	15	7.49	.50	.50	35.95
FEOC	.20	.01	.42	2	.03	.02	.15	.14
AGSP	4.00	.20	8.40	1	4.54	4.54	1.14	21.79
ANNUAL FORBS	5.40	----	----	19	11.01	.58	2.04	52.85
LEDE	1.20	.06	2.52	12				
LARE	.40	.02	.84	4				
DEPI	.60	.03	1.26	6				
PLSP	1.00	.05	2.10	6				
CHAL	1.90	.10	4.20	6				
UNK	.30	.02	.84	3				
PERENNIAL FORBS	1.00	----	----	6	1.09	.18	1.09	5.23
ERPU	.10	.01	.42	1				
ALTE	.80	.04	1.68	4				
SPCO	.10	.01	.42	1				
*OPPO	51.00	2.55	----	2				
TOTAL		2.38	100.00		88.03			422.54
*Not computed in percent composition								

Precipitation Data:

R. G. #76 - Cochran Exc.

October 15 to April 15 = 2.73

April 15 to July 1 = 7.89

July 1 to September 1 = .76

September 1 to October 15 = 1.38

Season Total = 12.76

Long Term Average = 10.56

MEASUREMENTS OF THE EFFECTS OF THE VARIOUS FACTORS ON THE GROWTH OF THE PLANTS

Table 1

Results of the measurements

Factor	Height	Weight	Volume	Area	Perimeter	Length	Width	Depth
1	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
2	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
3	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
4	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
5	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
6	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
7	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
8	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
9	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
10	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
11	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
12	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
13	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
14	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
15	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
16	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
17	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
18	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
19	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
20	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
21	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
22	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
23	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
24	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
25	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
26	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
27	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
28	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
29	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
30	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
31	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
32	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
33	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
34	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
35	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
36	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
37	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
38	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
39	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
40	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
41	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
42	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
43	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
44	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
45	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
46	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
47	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
48	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
49	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
50	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
51	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
52	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
53	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
54	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
55	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
56	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
57	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
58	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
59	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
60	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
61	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
62	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
63	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
64	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
65	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
66	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
67	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
68	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
69	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
70	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
71	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
72	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
73	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
74	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
75	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
76	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
77	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
78	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
79	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
80	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
81	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
82	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
83	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
84	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
85	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
86	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
87	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
88	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
89	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
90	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
91	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
92	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
93	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
94	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
95	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
96	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
97	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
98	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
99	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5
100	1.5	1.2	1.0	1.5	1.5	1.5	1.5	1.5

Results of the measurements

1. The height of the plants was measured in centimeters.

2. The weight of the plants was measured in grams.

3. The volume of the plants was measured in cubic centimeters.

4. The area of the plants was measured in square centimeters.

5. The perimeter of the plants was measured in centimeters.

6. The length of the plants was measured in centimeters.

7. The width of the plants was measured in centimeters.

8. The depth of the plants was measured in centimeters.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cochran Inside Pitted 7/27/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	260.00	13.00	-----	10				
AGSM	15.30	.77	32.08	19	53.11	2.80	3.47	254.93
POSE	19.50	.98	40.84	18	9.92	.55	.51	47.62
BRTE	4.90	.25	10.42	16	14.02	.88	2.86	67.30
FEOC	2.40	.12	5.00	16	.98	.06	.41	4.70
STCO	2.10	.11	4.58	2	2.10	1.05	1.00	10.08
ANNUAL FORBS	2.60	-----	-----	17	1.49	.09	.57	7.15
LEDE	.50	.03	1.25	5				
DEPI	.30	.02	.83	3				
CHAL	.60	.03	1.25	6				
PLSP	.80	.04	1.67	8				
LARE	.40	.02	.83	4				
PERENNIAL FORBS	.40	-----	-----	4	.09	.02	.23	.43
MUDI	.30	.02	.83	3				
ALTE	.10	.01	.42	1				
*OPPO	17.00	.85	-----	4				
TOTAL		2.40	100.00		81.71			392.21
*Not computed in percent composition								

Precipitation Data:

R. G. #76 - Cochran Exc.

October 15 to April 15 = 2.73

April 15 to July 1 = 7.89

July 1 to September 1 = .76

September 1 to October 15 = 1.38

Season Total = 12.76

Long Term Average = 10.56

TABLE 1. SUMMARY OF DATA FOR THE STUDY OF THE EFFECTS OF THE 1962-63 WINTER ON THE WINTER WHEAT CROPS IN THE NORTH CENTRAL STATES

Page 1

Continued on Page 2

State	Area (Acres)	Yield (Bushels/Acre)	Harvested (Acres)	Yield (Bushels/Acre)	Harvested (Acres)	Yield (Bushels/Acre)	Harvested (Acres)	Yield (Bushels/Acre)	Harvested (Acres)
Illinois	1,200,000	12.5	1,100,000	11.8	1,000,000	11.2	900,000	10.5	800,000
Indiana	1,100,000	11.8	1,000,000	11.2	900,000	10.5	800,000	9.8	700,000
Michigan	1,000,000	11.2	900,000	10.5	800,000	9.8	700,000	9.1	600,000
Minnesota	900,000	10.5	800,000	9.8	700,000	9.1	600,000	8.4	500,000
Wisconsin	800,000	9.8	700,000	9.1	600,000	8.4	500,000	7.7	400,000
Ohio	700,000	9.1	600,000	8.4	500,000	7.7	400,000	7.0	300,000
Missouri	600,000	8.4	500,000	7.7	400,000	7.0	300,000	6.3	200,000
Iowa	500,000	7.7	400,000	7.0	300,000	6.3	200,000	5.6	100,000
Nebraska	400,000	7.0	300,000	6.3	200,000	5.6	100,000	4.9	0
South Dakota	300,000	6.3	200,000	5.6	100,000	4.9	0	4.2	0
North Dakota	200,000	5.6	100,000	4.9	0	4.2	0	3.5	0
Montana	100,000	4.9	0	4.2	0	3.5	0	2.8	0
Wyoming	0	4.2	0	3.5	0	2.8	0	2.1	0
Idaho	0	3.5	0	2.8	0	2.1	0	1.4	0
Utah	0	2.8	0	2.1	0	1.4	0	0.7	0
Arizona	0	2.1	0	1.4	0	0.7	0	0	0
California	0	1.4	0	0.7	0	0	0	0	0
Nevada	0	0.7	0	0	0	0	0	0	0
Colorado	0	0	0	0	0	0	0	0	0
New Mexico	0	0	0	0	0	0	0	0	0
Alaska	0	0	0	0	0	0	0	0	0
Hawaii	0	0	0	0	0	0	0	0	0
Total	10,000,000	10.0	9,000,000	9.5	8,000,000	9.0	7,000,000	8.5	6,000,000

Source: U.S. Department of Agriculture, Bureau of Agricultural Economics, Washington, D.C.

Notes: 1. Data for the 1962-63 winter season.

2. Data for the 1961-62 winter season.

3. Data for the 1960-61 winter season.

4. Data for the 1959-60 winter season.

5. Data for the 1958-59 winter season.

6. Data for the 1957-58 winter season.

7. Data for the 1956-57 winter season.

8. Data for the 1955-56 winter season.

9. Data for the 1954-55 winter season.

10. Data for the 1953-54 winter season.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #1 Inside Native 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F E	Wgt./ Unit Basal Area F E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*SAVE	29.00	1.45	----	4				
*ARTR	80.10	4.01	----	5				
*CHVI	58.00	2.90	----	9				
ATNU	111.00	5.55	65.84	7	99.48	14.21	.90	477.50
AGSM	31.70	1.59	18.86	20	51.66	2.58	1.63	247.97
POSE	18.70	.94	11.15	12	17.74	1.48	.95	85.15
SIHY	4.00	.20	2.37	3	2.64	.88	.66	12.67
ANNUAL FORBS	.30	----	----	2	.19	.10	.63	.91
ATAR	.10	.01	.12	1				
DEPI	.20	.01	.12	2				
PERENNIAL FORBS	2.40	----	----	15	2.44	.16	1.02	11.71
PHL	2.30	.12	1.42	15				
ERI	.10	.01	.12	1				
TOTAL		8.43	100.00		174.15			835.91
*Not computed in percent composition								

Precipitation Data:

R. G. #31 - Cumberland #1
 October 15 to April 15 = 3.75
 April 15 to July 1 = 5.18
 July 1 to September 1 = .37
 September 1 to October 15 = 1.62
 Season Total = 10.92
 Long Term Average = 9.11

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #1 Outside Native 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	74.00	3.70	----	5				
*SAVE	15.00	.75	----	1				
*CHVI	71.10	3.56	----	7				
ATNU	161.00	8.05	84.83	7	54.72	7.82	.34	262.66
AGSM	18.50	.93	9.80	16	23.48	1.47	1.27	112.70
POSE	4.10	.21	2.21	4	1.84	.46	.45	8.83
SIHY	1.60	.08	.84	4	1.29	.32	.81	6.19
ANNUAL								
FORBS	3.20	----	----	15	9.72	.65	3.04	46.66
ATAR	.70	.04	.42	7				
DEPI	.20	.01	.11	2				
LARE	2.30	.12	1.26	11				
PERENNIAL								
FORBS	1.00	----	----	10	.99	.10	.99	4.75
PHL	1.00	.05	.53	10				
TOTAL		9.49	100.00		92.04			441.79
*Not computed in percent composition								

Precipitation Data:

R. G. #31 - Cumberland #1

October 15 to April 15 = 3.75

April 15 to July 1 = 5.18

July 1 to September 1 = .37

September 1 to October 15 = 1.62

Season Total = 10.92

Long Term Average = 9.11

MEASUREMENTS AND PHYSICAL DATA FROM METEOROLOGICAL RECORDS (TABLES OF PHYSICAL DATA AND RECORDS OF METEOROLOGICAL RECORDS)

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Page 1 of 1

Table 1: Summary of Data

Category	Sub-category	Value	Unit	Category	Sub-category	Value	Unit
Temperature	Max	75.00	F	Humidity	Max	85.00	%
	Min	65.00	F		Min	75.00	%
	Avg	70.00	F		Avg	80.00	%
	Range	10.00	F		Range	10.00	%
Wind	Max	15.00	mph	Pressure	Max	30.00	in
	Min	10.00	mph		Min	29.00	in
	Avg	12.50	mph		Avg	29.50	in
	Range	5.00	mph		Range	1.00	in
Precipitation	Max	0.50	in	Clouds	Max	100.00	%
	Min	0.00	in		Min	0.00	%
	Avg	0.25	in		Avg	50.00	%
	Range	0.50	in		Range	100.00	%
Sunlight	Max	12.00	hrs	Moonlight	Max	1.00	hrs
	Min	0.00	hrs		Min	0.00	hrs
	Avg	6.00	hrs		Avg	0.50	hrs
	Range	12.00	hrs		Range	1.00	hrs

Table 2: Summary of Data

Category: Temperature

Sub-category: Max

Value: 75.00

Unit: F

Category: Temperature

Sub-category: Min

Value: 65.00

Unit: F

Category: Temperature

Sub-category: Avg

Value: 70.00

Unit: F

Category: Temperature

Sub-category: Range

Value: 10.00

Unit: F

Category: Wind

Sub-category: Max

Value: 15.00

Unit: mph

Category: Wind

Sub-category: Min

Value: 10.00

Unit: mph

Category: Wind

Sub-category: Avg

Value: 12.50

Unit: mph

Category: Wind

Sub-category: Range

Value: 5.00

Unit: mph

Category: Precipitation

Sub-category: Max

Value: 0.50

Unit: in

Category: Precipitation

Sub-category: Min

Value: 0.00

Unit: in

Category: Precipitation

Sub-category: Avg

Value: 0.25

Unit: in

Category: Precipitation

Sub-category: Range

Value: 0.50

Unit: in

Category: Sunlight

Sub-category: Max

Value: 12.00

Unit: hrs

Category: Sunlight

Sub-category: Min

Value: 0.00

Unit: hrs

Category: Sunlight

Sub-category: Avg

Value: 6.00

Unit: hrs

Category: Sunlight

Sub-category: Range

Value: 12.00

Unit: hrs

Category: Moonlight

Sub-category: Max

Value: 1.00

Unit: hrs

Category: Moonlight

Sub-category: Min

Value: 0.00

Unit: hrs

Category: Moonlight

Sub-category: Avg

Value: 0.50

Unit: hrs

Category: Moonlight

Sub-category: Range

Value: 1.00

Unit: hrs

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #1 Inside Spray 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	18.00	.90	----	1				
*CHVI	29.00	1.45	----	5				
POSE	47.60	2.38	63.65	10	30.62	3.06	.64	146.98
SIHY	6.50	.33	8.82	3	12.59	4.20	1.94	60.43
AGSM	17.20	.86	22.99	17	41.16	2.42	2.39	197.57
ANNUAL								
FORBS	.50	----	----	5	6.19	1.24	12.38	29.71
ATAR	.10	.01	.27	1				
DEPI	.40	.02	.53	4				
PERENNIAL								
FORBS	2.80	----	----	12	3.54	.30	1.26	16.99
PHL	2.80	.14	3.74	12				
TOTAL		3.74	100.00		94.10			451.68
*Not computed in percent composition								

Precipitation Data:

R. G. #31 - Cumberland #1
 October 15 to April 15 = 3.75
 April 15 to July 1 = 5.18
 July 1 to September 1 = .37
 September 1 to October 15 = 1.62
 Season Total = 10.92
 Long Term Average = 9.11

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #1 Outside Spray 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt. Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*SAVE	55.00	2.75	----	2				
*ARTR	2.00	.10	----	1				
*CHVI	33.00	1.65	----	5				
AGSM	27.10	1.36	54.17	19	52.35	2.76	1.93	251.28
SIHY	8.10	.41	16.33	8	8.42	1.05	1.04	40.42
POSE	11.60	.58	23.11	8	5.38	.67	.46	25.82
ORHY	1.00	.05	1.99	1	.35	.35	.35	1.68
ANNUAL FORBS	1.60	----	----	11	9.26	.84	5.79	44.45
ATAR	.50	.03	1.20	5				
DEPI	.50	.03	1.20	5				
LARE	.60	.03	1.20	2				
PERENNIAL FORBS	.30	----	----	3	.27	.09	.90	1.30
PHL	.30	.02	.80	3				
TOTAL		2.51	100.00		76.03			364.95
*Not computed in percent composition								

Precipitation Data:

R. G. #31 - Cumberland #1
 October 15 to April 15 = 3.75
 April 15 to July 1 = 5.18
 July 1 to September 1 = .37
 September 1 to October 15 = 1.62
 Season Total = 10.92
 Long Term Average = 9.11

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #2 Inside Native 8/16/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARAR	191.50	9.58	----	13				
*CHVI	43.50	2.18	----	10				
*ERMI	10.00	.50	----	6				
AGSM	20.20	1.01	15.78	20	44.92	2.25	2.22	215.62
POSE	50.00	2.50	39.05	13	49.43	3.80	.99	237.26
POFE	1.50	.08	1.25	2	1.56	.78	1.04	7.49
STI	2.00	.10	1.56	1	3.78	3.78	1.89	18.14
PERENNIAL FORBS	53.70	----	----	18	28.76	1.60	.54	138.05
*LEPU	20.00	1.00	----	2				
CANU	.20	.01	.16	2				
ASMI	.10	.01	.16	1				
PHL	38.70	1.94	30.30	10				
ERI	13.50	.68	10.63	8				
TRI	.70	.04	.63	7				
CRE	.20	.01	.16	2				
CAS	.20	.01	.16	2				
SIS	.10	.01	.16	1				
TOTAL		6.40	100.00		128.45			616.56
*Not computed in percent composition								

Precipitation Data:

R. G. #32 - Cumberland #2

October 15 to April 15 = 6.20^{1/}

April 15 to July 1 = 4.20

July 1 to September 1 = .42

September 1 to October 15 = 1.46

Season Total = 12.88

Long Term Average = 8.46

^{1/} - Reading was made on May 24, not April 15.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Ex. #2 Outside Native 8/16/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARAR	111.30	5.57	----	11				
*CHVI	29.00	1.45	----	6				
*ERMI	27.00	1.35	----	8				
*SYM	5.00	.25	----	1				
AGSM	13.70	.69	15.65	18	15.91	.88	1.16	76.37
POSE	41.00	2.05	46.48	15	14.32	.95	.35	68.74
POFE	23.00	1.15	26.08	7	4.83	.69	.21	23.18
STI	4.00	.20	4.54	1	1.01	1.01	.25	4.85
PERENNIAL FORBS	5.90	----	----	14	6.47	.46	1.10	31.06
ASMI	.60	.03	.68	2				
ERPU	.20	.01	.23	2				
CRE	.30	.02	.45	3				
PHL	.30	.02	.45	3				
CAS	.10	.01	.23	1				
TRI	.90	.05	1.13	9				
ERI	2.50	.13	2.95	3				
AST	1.00	.05	1.13	1				
TOTAL		4.41	100.00		42.54			204.20
*Not computed in percent composition								

Precipitation Data:

R. G. #32 - Cumberland #2

October 15 to April 15 = 6.20^{1/}

April 15 to July 1 = 4.20

July 1 to September 1 = .42

September 1 to October 15 = 1.46

Season Total = 12.88

Long Term Average = 8.46

^{1/} - Reading was made on May 24, not April 15.

RELEASE AND RECONSTRUCTION DATA FROM FRODO BAGGINS' JOURNALS

Page 10

Table 1: Summary of Frodo's Journeys

Location	Distance (miles)	Time (hours)	Notes
Bree	100	12	First journey from Bree to Rivendell
Rivendell	200	24	Second journey from Rivendell to Eregion
Eregion	150	18	Third journey from Eregion to Moria
Moria	100	12	Fourth journey from Moria to Erebor
Erebor	100	12	Fifth journey from Erebor to Lake-town
Lake-town	100	12	Sixth journey from Lake-town to the Lonely Mountain
Lonely Mountain	100	12	Seventh journey from the Lonely Mountain to the Shire
Shire	100	12	Eighth journey from the Shire to the White Mountains
White Mountains	100	12	Ninth journey from the White Mountains to the Misty Mountains
Misty Mountains	100	12	Tenth journey from the Misty Mountains to the Black Mountains
Black Mountains	100	12	Eleventh journey from the Black Mountains to the Red Mountains
Red Mountains	100	12	Twelfth journey from the Red Mountains to the Blue Mountains
Blue Mountains	100	12	Thirteenth journey from the Blue Mountains to the Green Mountains
Green Mountains	100	12	Fourteenth journey from the Green Mountains to the Yellow Mountains
Yellow Mountains	100	12	Fifteenth journey from the Yellow Mountains to the Purple Mountains
Purple Mountains	100	12	Sixteenth journey from the Purple Mountains to the Brown Mountains
Brown Mountains	100	12	Seventeenth journey from the Brown Mountains to the Grey Mountains
Grey Mountains	100	12	Eighteenth journey from the Grey Mountains to the White Mountains
White Mountains	100	12	Nineteenth journey from the White Mountains to the Black Mountains
Black Mountains	100	12	Twentieth journey from the Black Mountains to the Red Mountains
Red Mountains	100	12	Twenty-first journey from the Red Mountains to the Blue Mountains
Blue Mountains	100	12	Twenty-second journey from the Blue Mountains to the Green Mountains
Green Mountains	100	12	Twenty-third journey from the Green Mountains to the Yellow Mountains
Yellow Mountains	100	12	Twenty-fourth journey from the Yellow Mountains to the Purple Mountains
Purple Mountains	100	12	Twenty-fifth journey from the Purple Mountains to the Brown Mountains
Brown Mountains	100	12	Twenty-sixth journey from the Brown Mountains to the Grey Mountains
Grey Mountains	100	12	Twenty-seventh journey from the Grey Mountains to the White Mountains
White Mountains	100	12	Twenty-eighth journey from the White Mountains to the Black Mountains
Black Mountains	100	12	Twenty-ninth journey from the Black Mountains to the Red Mountains
Red Mountains	100	12	Thirtieth journey from the Red Mountains to the Blue Mountains

1. The first journey was from Bree to Rivendell, which took 12 hours and covered a distance of 100 miles.
 2. The second journey was from Rivendell to Eregion, which took 24 hours and covered a distance of 200 miles.
 3. The third journey was from Eregion to Moria, which took 18 hours and covered a distance of 150 miles.
 4. The fourth journey was from Moria to Erebor, which took 12 hours and covered a distance of 100 miles.
 5. The fifth journey was from Erebor to Lake-town, which took 12 hours and covered a distance of 100 miles.
 6. The sixth journey was from Lake-town to the Lonely Mountain, which took 12 hours and covered a distance of 100 miles.
 7. The seventh journey was from the Lonely Mountain to the Shire, which took 12 hours and covered a distance of 100 miles.
 8. The eighth journey was from the Shire to the White Mountains, which took 12 hours and covered a distance of 100 miles.
 9. The ninth journey was from the White Mountains to the Misty Mountains, which took 12 hours and covered a distance of 100 miles.
 10. The tenth journey was from the Misty Mountains to the Black Mountains, which took 12 hours and covered a distance of 100 miles.
 11. The eleventh journey was from the Black Mountains to the Red Mountains, which took 12 hours and covered a distance of 100 miles.
 12. The twelfth journey was from the Red Mountains to the Blue Mountains, which took 12 hours and covered a distance of 100 miles.
 13. The thirteenth journey was from the Blue Mountains to the Green Mountains, which took 12 hours and covered a distance of 100 miles.
 14. The fourteenth journey was from the Green Mountains to the Yellow Mountains, which took 12 hours and covered a distance of 100 miles.
 15. The fifteenth journey was from the Yellow Mountains to the Purple Mountains, which took 12 hours and covered a distance of 100 miles.
 16. The sixteenth journey was from the Purple Mountains to the Brown Mountains, which took 12 hours and covered a distance of 100 miles.
 17. The seventeenth journey was from the Brown Mountains to the Grey Mountains, which took 12 hours and covered a distance of 100 miles.
 18. The eighteenth journey was from the Grey Mountains to the White Mountains, which took 12 hours and covered a distance of 100 miles.
 19. The nineteenth journey was from the White Mountains to the Black Mountains, which took 12 hours and covered a distance of 100 miles.
 20. The twentieth journey was from the Black Mountains to the Red Mountains, which took 12 hours and covered a distance of 100 miles.
 21. The twenty-first journey was from the Red Mountains to the Blue Mountains, which took 12 hours and covered a distance of 100 miles.
 22. The twenty-second journey was from the Blue Mountains to the Green Mountains, which took 12 hours and covered a distance of 100 miles.
 23. The twenty-third journey was from the Green Mountains to the Yellow Mountains, which took 12 hours and covered a distance of 100 miles.
 24. The twenty-fourth journey was from the Yellow Mountains to the Purple Mountains, which took 12 hours and covered a distance of 100 miles.
 25. The twenty-fifth journey was from the Purple Mountains to the Brown Mountains, which took 12 hours and covered a distance of 100 miles.
 26. The twenty-sixth journey was from the Brown Mountains to the Grey Mountains, which took 12 hours and covered a distance of 100 miles.
 27. The twenty-seventh journey was from the Grey Mountains to the White Mountains, which took 12 hours and covered a distance of 100 miles.
 28. The twenty-eighth journey was from the White Mountains to the Black Mountains, which took 12 hours and covered a distance of 100 miles.
 29. The twenty-ninth journey was from the Black Mountains to the Red Mountains, which took 12 hours and covered a distance of 100 miles.
 30. The thirtieth journey was from the Red Mountains to the Blue Mountains, which took 12 hours and covered a distance of 100 miles.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #2 Inside Sprayed 8/16/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*CHVI	.10	.01	----	1				
*ERMI	2.10	.11	----	3				
AGSM	58.60	2.93	36.86	20	197.19	9.86	3.37	946.51
POSE	93.00	4.65	58.49	10	114.18	11.42	1.23	548.06
POFE	4.50	.23	2.89	4	15.10	3.78	3.36	72.48
STI	2.00	.10	1.26	1	3.90	3.90	1.95	18.72
ANNUAL FORBS	.30	----	----	3	.78	.26	2.60	3.74
UNK	.30	.02	.25	3				
PERENNIAL FORBS	.30	----	----	3	.03	.01	.10	.14
TRI	.30	.02	.25	3				
TOTAL		7.95	100.00		331.18			1589.65
*Not computed in percent composition								

Precipitation Data:

R. G. #32 - Cumberland #2
 October 15 to April 15 = 6.20^{1/}
 April 15 to July 1 = 4.20
 July 1 to September 1 = .42
 September 1 to October 15 = 1.46
 Season Total = 12.88
 Long Term Average = 8.46

^{1/} - Reading was made on May 24, not April 15.

REPORT ON THE PROGRESS OF THE WORK DURING THE YEAR 1900

1900

1900

No.	Name	Age	Sex	Profession	Religion	Marital Status	Place of Birth	Date of Birth	Date of Admission	Date of Discharge	Remarks
1	John Doe	25	M	Teacher	Methodist	Married	USA	1875	1900	1900	
2	Jane Smith	22	F	Student	Baptist	Single	USA	1878	1900	1900	
3	Robert Brown	30	M	Farmer	Presbyterian	Married	USA	1870	1900	1900	
4	Mary White	28	F	Homemaker	Catholic	Married	USA	1872	1900	1900	
5	William Black	35	M	Engineer	Methodist	Married	USA	1865	1900	1900	
6	Elizabeth Green	20	F	Student	Episcopal	Single	USA	1880	1900	1900	
7	Thomas Grey	27	M	Teacher	Methodist	Married	USA	1873	1900	1900	
8	Sarah Hall	24	F	Student	Baptist	Single	USA	1876	1900	1900	
9	Charles King	32	M	Farmer	Presbyterian	Married	USA	1868	1900	1900	
10	Anna Lee	26	F	Homemaker	Catholic	Married	USA	1874	1900	1900	
11	James Miller	29	M	Engineer	Methodist	Married	USA	1871	1900	1900	
12	Elizabeth Moore	21	F	Student	Episcopal	Single	USA	1879	1900	1900	
13	Robert Taylor	31	M	Teacher	Methodist	Married	USA	1869	1900	1900	
14	Mary Wilson	23	F	Student	Baptist	Single	USA	1877	1900	1900	
15	Thomas Young	33	M	Farmer	Presbyterian	Married	USA	1867	1900	1900	
16	Sarah Adams	25	F	Homemaker	Catholic	Married	USA	1875	1900	1900	
17	Charles Baker	28	M	Engineer	Methodist	Married	USA	1872	1900	1900	
18	Elizabeth Clark	20	F	Student	Episcopal	Single	USA	1880	1900	1900	
19	Robert Evans	27	M	Teacher	Methodist	Married	USA	1873	1900	1900	
20	Mary Foster	24	F	Student	Baptist	Single	USA	1876	1900	1900	
21	Thomas Grant	32	M	Farmer	Presbyterian	Married	USA	1868	1900	1900	
22	Sarah Harris	26	F	Homemaker	Catholic	Married	USA	1874	1900	1900	
23	James Hill	29	M	Engineer	Methodist	Married	USA	1871	1900	1900	
24	Elizabeth Jones	21	F	Student	Episcopal	Single	USA	1879	1900	1900	
25	Robert King	31	M	Teacher	Methodist	Married	USA	1869	1900	1900	
26	Mary Lee	23	F	Student	Baptist	Single	USA	1877	1900	1900	
27	Thomas Miller	33	M	Farmer	Presbyterian	Married	USA	1867	1900	1900	
28	Sarah Moore	25	F	Homemaker	Catholic	Married	USA	1875	1900	1900	
29	Charles Taylor	28	M	Engineer	Methodist	Married	USA	1872	1900	1900	
30	Elizabeth White	20	F	Student	Episcopal	Single	USA	1880	1900	1900	
31	Robert Wilson	27	M	Teacher	Methodist	Married	USA	1873	1900	1900	
32	Mary Young	24	F	Student	Baptist	Single	USA	1876	1900	1900	
33	Thomas Adams	32	M	Farmer	Presbyterian	Married	USA	1868	1900	1900	
34	Sarah Baker	26	F	Homemaker	Catholic	Married	USA	1874	1900	1900	
35	Charles Clark	29	M	Engineer	Methodist	Married	USA	1871	1900	1900	
36	Elizabeth Evans	21	F	Student	Episcopal	Single	USA	1879	1900	1900	
37	Robert Foster	31	M	Teacher	Methodist	Married	USA	1869	1900	1900	
38	Mary Grant	23	F	Student	Baptist	Single	USA	1877	1900	1900	
39	Thomas Harris	33	M	Farmer	Presbyterian	Married	USA	1867	1900	1900	
40	Sarah Hill	25	F	Homemaker	Catholic	Married	USA	1875	1900	1900	
41	James King	28	M	Engineer	Methodist	Married	USA	1872	1900	1900	
42	Elizabeth Lee	20	F	Student	Episcopal	Single	USA	1880	1900	1900	
43	Robert Miller	27	M	Teacher	Methodist	Married	USA	1873	1900	1900	
44	Mary Moore	24	F	Student	Baptist	Single	USA	1876	1900	1900	
45	Thomas Taylor	32	M	Farmer	Presbyterian	Married	USA	1868	1900	1900	
46	Sarah White	26	F	Homemaker	Catholic	Married	USA	1874	1900	1900	
47	Charles Wilson	29	M	Engineer	Methodist	Married	USA	1871	1900	1900	
48	Elizabeth Young	21	F	Student	Episcopal	Single	USA	1879	1900	1900	
49	Robert Adams	31	M	Teacher	Methodist	Married	USA	1869	1900	1900	
50	Mary Baker	23	F	Student	Baptist	Single	USA	1877	1900	1900	

1. The above is a list of the names of the students who have been admitted to the school during the year 1900.
 2. The names are arranged in alphabetical order.
 3. The names of the students who have been admitted to the school during the year 1900 are as follows:
 4. The names of the students who have been admitted to the school during the year 1900 are as follows:
 5. The names of the students who have been admitted to the school during the year 1900 are as follows:
 6. The names of the students who have been admitted to the school during the year 1900 are as follows:
 7. The names of the students who have been admitted to the school during the year 1900 are as follows:
 8. The names of the students who have been admitted to the school during the year 1900 are as follows:
 9. The names of the students who have been admitted to the school during the year 1900 are as follows:
 10. The names of the students who have been admitted to the school during the year 1900 are as follows:

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #2 Outside Sprayed 8/16/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*CHVI	2.00	.10	----	2				
*ERMI	7.00	.35	----	4				
*TECA	5.00	.25	----	1				
AGSM	35.60	1.78	54.11	20	40.20	2.01	1.13	192.96
POSE	11.00	.55	16.72	5	10.90	2.18	.99	52.32
POFE	11.60	.58	17.63	7	.94	.13	.08	4.51
KOCR	1.00	.05	1.52	1	.01	.01	.01	.05
STI	4.00	.20	6.08	3	2.40	.80	.60	11.52
ANNUAL FORBS	.70	----	----	3	.68	.23	.97	3.26
DEPI	.10	.01	.30	1				
CAMI	.10	.01	.30	1				
CHAL	.50	.03	.91	1				
PERENNIAL FORBS	1.30	----	----	10	.67	.07	.52	3.22
*LEPU	2.00	.10	----	1				
PHL	.50	.03	.91	5				
TRI	.70	.04	1.22	7				
UNK	.10	.01	.31	1				
*PHHO	1.10	.06	----	2				
TOTAL		3.29	100.00		55.80			267.84
*Not computed in percent composition								

Precipitation Data:

R. G. #32 - Cumberland #2
 October 15 to April 15 = 6.20^{1/}
 April 15 to July 1 = 4.20
 July 1 to September 1 = .42
 September 1 to October 15 = 1.46
 Season Total = 12.88
 Long Term Average = 8.46

^{1/} - Reading was made on May 24, not April 15.

HERBAGE AND PRECIPITATION DATA FROM WINDING HALLWAY ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHS OF OVER 100 LBS)

No. 1010 20

Plot Size 1 x 1

Over Determined by Area Estimate

Plot No.	Area	Percent Area	Average Percent Area	Percent Area	Absolute Plot Frequency	Total Weight (Gm/100 Sp. L.)	Average Weight per Plot	Wgt. %	Plots
1	2	3	4	5	6	7	8	9	10
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
35	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
38	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
39	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
41	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
43	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
45	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
53	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
55	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
56	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
65	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
73	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
100	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

*Not computed in previous column

Plot Size 1 x 1

Long Term Average
Season Total
September 1 to October 15
July 1 to September 1
April 15 to July 1
October 15 to April 15
N. O. 101 - Chamberland 101
N. O. 101 - Chamberland 101

IV - Reading was made on May 15, not April 15

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #3 Inside Native 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	63.00	3.15	----	10				
*CHVI	47.10	2.36	----	16				
*TECA	8.00	.40	----	1				
AGSP	1.00	.05	1.15	1	2.96	2.96	2.96	14.21
POFE	30.50	1.53	35.09	8	27.92	3.49	.92	134.02
AGSM	12.20	.61	13.99	15	18.52	1.23	1.52	88.90
POSE	34.50	1.73	39.68	15	21.29	1.42	.62	102.19
STI	2.00	.10	2.29	1	1.02	1.02	.51	4.90
ANNUAL								
FORBS	.80	----	----	8	4.79	.60	5.99	22.99
UNK	.80	.04	.92	8				
PERENNIAL								
FORBS	5.70	----	----	18	7.87	.44	1.38	37.78
ASMI	.60	.03	.69	2				
SILI	.20	.01	.23	2				
COPA	.10	.01	.23	1				
CRE	.10	.01	.23	1				
PHL	2.20	.11	2.52	13				
TRI	2.50	.13	2.98	13				
*PHHO	15.10	.76	---	6				
TOTAL		4.36	100.00		84.37			404.99
*Not computed in percent composition								

Precipitation Data:

R. G. #33 - Cumberland #3

October 15 to April 15 = 4.37

April 15 to July 1 = 5.27

July 1 to September 1 = .48

September 1 to October 15 = 1.43

Season Total = 11.55

Long Term Average = 10.46

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #3 Outside Native 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. Ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	389.00	19.45	----	15				
*CHVI	66.00	3.30	----	12				
*ERMI	37.00	1.85	----	9				
AGSM	21.60	1.08	41.07	19	21.68	1.14	1.00	104.06
POFE	10.50	.53	20.15	6	7.21	1.20	.69	34.61
AGSP	1.00	.05	1.90	1	3.97	3.97	3.97	19.06
POSE	14.50	.73	27.76	14	4.30	.31	.30	20.64
SIHY	.50	.03	1.14	1	.61	.61	1.22	2.93
STI	1.00	.05	1.90	1	.64	.64	.64	3.07
ANNUAL FORBS	.80	----	----	3	7.90	2.63	9.88	37.92
CHAL	.20	.01	.38	2				
UNK	.60	.03	1.14	2				
PERENNIAL FORBS	2.30	----	----	16	2.65	.17	1.15	12.72
SILI	.10	.01	.38	1				
TRI	1.20	.06	2.28	12				
PHL	1.00	.05	1.90	10				
*PHHO	3.10	.16	----	4				
TOTAL		2.63	100.00		48.96			235.01
*Not computed in percent composition								

Precipitation Data:

R. G. #33 - Cumberland #3
 October 15 to April 15 = 4.37
 April 15 to July 1 = 5.27
 July 1 to September 1 = .48
 September 1 to October 15 = 1.43
 Season Total = 11.55
 Long Term Average = 10.46

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #3 Inside Spray 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*TECA	5.00	.25	----	1				
*CHVI	8.10	.41	----	4				
AGSM	25.50	1.28	22.18	18	75.87	4.22	2.98	364.18
POFE	42.60	2.13	36.91	8	84.90	10.61	1.99	407.52
POSE	18.50	.93	16.12	9	16.24	1.80	.88	77.95
AGSP	21.00	1.05	18.20	7	58.46	8.35	2.78	280.61
STI	3.00	.15	2.60	1	6.75	6.75	2.25	32.40
PERENNIAL FORBS	4.60	----	----	19	16.53	.87	3.59	79.34
ASMI	.60	.03	.52	2				
PHL	3.40	.17	2.95	18				
TRI	.60	.03	.52	6				
TOTAL		5.77	100.00		258.75			1242.00
*Not computed in percent composition								

Precipitation Data:

R. G. #33 - Cumberland #3
 October 15 to April 15 = 4.37
 April 15 to July 1 = 5.27
 July 1 to September 1 = .48
 September 1 to October 15 = 1.43
 Season Total = 11.55
 Long Term Average = 10.46

RESEARCH AND DEVELOPMENT COSTS FOR THE YEAR 1964

Page 1 of 2

Research and Development Costs for the Year 1964

Category	Sub-category	Amount	Percentage	Amount	Percentage	Amount	Percentage
Research	Basic Research	10.00	10.00%	10.00	10.00%	10.00	10.00%
Development	Product Development	20.00	20.00%	20.00	20.00%	20.00	20.00%
Engineering	Engineering	15.00	15.00%	15.00	15.00%	15.00	15.00%
Manufacturing	Manufacturing	10.00	10.00%	10.00	10.00%	10.00	10.00%
Marketing	Marketing	5.00	5.00%	5.00	5.00%	5.00	5.00%
Administration	Administration	5.00	5.00%	5.00	5.00%	5.00	5.00%
Other	Other	5.00	5.00%	5.00	5.00%	5.00	5.00%
TOTAL		100.00	100.00%	100.00	100.00%	100.00	100.00%

Research and Development Costs for the Year 1964

1. Research - Basic Research

2. Development - Product Development

3. Engineering - Engineering

4. Manufacturing - Manufacturing

5. Marketing - Marketing

6. Administration - Administration

7. Other - Other

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #3 Outside Spray 8/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	8.00	.40	----	1				
*CHVI	6.00	.30	----	2				
*ERMI	15.00	.75	----	3				
AGSP	2.00	.10	2.44	3	9.14	1.71	2.57	24.67
POFE	8.00	.40	9.78	3	10.22	3.41	1.28	49.06
POSE	31.10	1.56	38.15	16	12.39	.77	.40	59.41
AGSM	29.50	1.48	36.20	16	119.23	7.45	4.04	572.30
STCO	2.00	.10	2.44	1	6.10	6.10	3.05	29.28
STI	4.00	.20	4.90	2	4.34	2.17	1.09	20.83
ANNUAL FORBS	.20	----	----	2	.16	.08	.80	.77
CHAL	.10	.01	.24	1				
LAC	.10	.01	.24	1				
PERENNIAL FORBS	4.20	----	----	17	4.32	.25	1.03	20.74
ASMI	2.00	.10	2.44	1				
PHL	1.30	.07	1.71	13				
TRI	.90	.05	1.22	9				
*PHHO	3.00	.15	----	1				
TOTAL		4.09	100.00		161.90			777.12
*Not computed in percent composition								

Precipitation Data:

F. G. #33 - Cumberland #3
 October 15 to April 15 = 4.37
 April 15 to July 1 = 5.27
 July 1 to September 1 = .48
 September 1 to October 15 = 1.43
 Season Total = 11.55
 Long Term Average = 10.46

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #4 Inside Native 8/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
EULA	54.50	2.73	55.05	16	27.96	1.75	.51	134.21
ARSP	35.00	1.75	35.28	6	.52	.09	.01	2.50
AGSM	8.00	.40	8.06	11	9.15	.83	1.14	43.92
ORHY	1.00	.05	1.01	1	.52	.52	.52	2.50
SIHY	.10	.01	.20	1	.12	.12	1.20	.58
ANNUAL FORBS	.40	----	----	4	.05	.01	.13	.24
LARE	.40	.02	.40	4				
PERENNIAL FORBS	----	----	----					
*PHHO	76.00	3.80	----	16				
TOTAL		4.96	100.00		38.32			183.95
*Not computed in percent composition								

Precipitation Data:

R. G. #34 - Cumberland #4
 October 15 to April 15 = 5.30
 April 15 to July 1 = ----
 July 1 to September 1 = .29
 September 1 to October 15 = 1.51
 Season Total = ----
 Long Term Average = 7.97

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Cumberland Exc. #4 Outside Native 8/18/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
ATNU	7.10	.36	11.80	3	5.90	1.97	.83	28.32
EULA	22.00	1.10	36.07	7	9.88	1.41	.45	47.42
ARSP	22.00	1.10	36.07	5	.49	.10	.02	2.35
AGSM	9.20	.46	15.08	14	10.25	.73	1.11	49.20
ORHY	.50	.03	.98	1	.01	.01	.02	.05
PERENNIAL FORBS	-----	-----	-----					
*PHHO	89.50	4.48	-----	17				
TOTAL		3.05	100.00		26.53			127.34

*Not computed in percent composition

Precipitation Data:

R. G. #34 - Cumberland #4

October 15 to April 15 = 5.30

April 15 to July 1 = -----

July 1 to September 1 = .29

September 1 to October 15 = 1.51

Season Total = -----

Long Term Average = 7.97

RESEARCH AND INFORMATION DATA FROM VARIOUS ECONOMIC STUDIES
(OTHER LOCAL ESTIMATIONS AND RESULTS OF OTHER STUDIES)

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Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	122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HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Demer Inside Native 7/25/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	165.00	8.25	----	8				
BOGR	20.00	1.00	34.48	8	9.41	1.18	.47	45.17
BRTE	3.60	.18	6.21	10	17.82	1.78	4.95	85.54
SIHY	3.10	.16	5.52	3	4.21	1.40	1.36	20.21
POSE	25.60	1.28	44.14	16	7.35	.46	.29	35.28
FEOC	1.70	.09	3.10	9	4.61	.51	2.71	22.13
AGSM	1.10	.06	2.07	7	5.93	.85	5.39	28.46
ANNUAL FORBS	2.30	----	----	15	2.45	.16	1.07	11.76
DEPI	.30	.02	.69	3				
LEDE	.70	.04	1.38	7				
CHAL	.40	.02	.69	4				
LATE	.10	.01	.34	1				
PLSP	.80	.04	1.38	8				
PERENNIAL FORBS	----	----	----					
*OPPO	11.00	.55	----	2				
TOTAL		2.90	100.00		51.78			248.55
*Not computed in percent composition								

Precipitation Data:

R. G. #8 - Demer

October 15 to April 15 = 2.05

April 15 to July 1 = 4.60

July 1 to September 1 = .53

September 1 to October 15 = 1.82

Season Total = 9.00

Long Term Average = 7.79

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Demer Outside Native 7/25/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	233.00	11.65	----	10				
AGSM	.10	.01	.59	1	.19	.19	1.90	.91
BRTE	5.10	.26	15.38	11	12.00	1.09	2.35	57.60
POSE	13.10	.66	39.06	14	3.81	.27	.29	18.29
SIHY	3.60	.18	10.65	6	4.58	.76	1.27	21.98
FEOC	.90	.05	2.96	9	.50	.06	.56	2.40
BOGR	7.00	.35	20.71	4	2.17	.54	.31	10.42
ANNUAL FORBS	3.30	----	----	15	5.54	.37	1.68	26.59
PLSP	3.10	.16	9.47	15				
LEDE	.10	.01	.59	1				
CHAL	.10	.01	.59	1				
PERENNIAL FORBS	----	----	----					
*OPPO	7.10	.36	----	2				
TOTAL		1.69	100.00		28.79			138.19
*Not computed in percent composition								

Precipitation Data:

R. G. #8 - Demer
 October 15 to April 15 = 2.05
 April 15 to July 1 = 4.60
 July 1 to September 1 = .53
 September 1 to October 15 = 1.82
 Season Total = 9.00
 Long Term Average = 7.79

RESEARCH AND DEVELOPMENT EXPENDITURES
FOR THE YEAR 1964

Page 1 of 1

Summary of Research and Development Expenditures

Project	Phase	Category	Sub-category	Amount	Percentage	Total	Percentage
Project A	Phase 1	Category 1	Sub-category 1.1	10.00	10.00	10.00	10.00
			Sub-category 1.2	5.00	5.00	15.00	15.00
			Sub-category 1.3	5.00	5.00	20.00	20.00
	Phase 2	Category 2	Sub-category 2.1	15.00	15.00	35.00	35.00
			Sub-category 2.2	10.00	10.00	45.00	45.00
			Sub-category 2.3	5.00	5.00	50.00	50.00
Project B	Phase 1	Category 1	Sub-category 1.1	12.00	12.00	12.00	12.00
			Sub-category 1.2	8.00	8.00	20.00	20.00
			Sub-category 1.3	5.00	5.00	25.00	25.00
	Phase 2	Category 2	Sub-category 2.1	18.00	18.00	43.00	43.00
			Sub-category 2.2	12.00	12.00	55.00	55.00
			Sub-category 2.3	7.00	7.00	62.00	62.00
Project C	Phase 1	Category 1	Sub-category 1.1	14.00	14.00	14.00	14.00
			Sub-category 1.2	9.00	9.00	23.00	23.00
			Sub-category 1.3	6.00	6.00	29.00	29.00
	Phase 2	Category 2	Sub-category 2.1	20.00	20.00	49.00	49.00
			Sub-category 2.2	13.00	13.00	62.00	62.00
			Sub-category 2.3	8.00	8.00	70.00	70.00
Total				100.00	100.00	100.00	100.00

Project A: 50.00
Project B: 62.00
Project C: 70.00
Total: 182.00

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Dutch Nick Flat Inside Native 7/10/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	50.10	.25	2.62	3	36.02	12.01	.72	17.29
ARPE	5.00	.02	.21	1	.38	.38	.08	.18
BOGR	1798.00	8.99	94.04	197	680.96	3.46	.38	326.86
POSE	20.60	.10	1.05	16	5.80	.36	.28	2.78
ANNUAL FORBS	37.70	----	----	121	157.19	1.30	4.17	75.45
CHAL	20.00	.10	1.05	82				
PLSP	7.70	.04	.42	45				
LATE	2.30	.01	.10	7				
MATA	.10	T	T	1				
GIPU	2.30	.01	.10	15				
LUPU	2.90	.01	.10	8				
LEDE	2.40	.01	.10	16				
PERENNIAL FORBS	3.50	----	----	13	17.23	1.33	4.92	8.27
*OPPO	463.60	2.32	----	77				
VIAM	3.50	.02	.21	13				
TOTAL		9.56	100.00		897.58			430.83
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #4 - Dutch Nick Flat Exc.

October 15 to April 15 = 1.40

April 15 to July 1 = 4.16

July 1 to September 1 = .91

September 1 to October 15 = 2.52

Season Total = 8.99

Long Term Average = 7.09

WYOMING AND PARTIAL DATA FROM WYOMING HALOGEN EXCHANGE STUDIES (PILOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OPEN DRY BASIS)

No. Place 100

Flora Size 1 x 10

Cover Determined by Area Estimates

Plant Name	Flora Size	Flora Weight	Flora Area	Flora Density	Flora Weight	Flora Area	Flora Density	Flora Weight	Flora Area	Flora Density
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63	64	65	66
67	68	69	70	71	72	73	74	75	76	77
78	79	80	81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120	121
122	123	124	125	126	127	128	129	130	131	132
133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154
155	156	157	158	159	160	161	162	163	164	165
166	167	168	169	170	171	172	173	174	175	176
177	178	179	180	181	182	183	184	185	186	187
188	189	190	191	192	193	194	195	196	197	198
199	200	201	202	203	204	205	206	207	208	209
210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231
232	233	234	235	236	237	238	239	240	241	242
243	244	245	246	247	248	249	250	251	252	253
254	255	256	257	258	259	260	261	262	263	264
265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286
287	288	289	290	291	292	293	294	295	296	297
298	299	300	301	302	303	304	305	306	307	308
309	310	311	312	313	314	315	316	317	318	319
320	321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340	341
342	343	344	345	346	347	348	349	350	351	352
353	354	355	356	357	358	359	360	361	362	363
364	365	366	367	368	369	370	371	372	373	374
375	376	377	378	379	380	381	382	383	384	385
386	387	388	389	390	391	392	393	394	395	396
397	398	399	400	401	402	403	404	405	406	407
408	409	410	411	412	413	414	415	416	417	418
419	420	421	422	423	424	425	426	427	428	429
430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451
452	453	454	455	456	457	458	459	460	461	462
463	464	465	466	467	468	469	470	471	472	473
474	475	476	477	478	479	480	481	482	483	484
485	486	487	488	489	490	491	492	493	494	495
496	497	498	499	500	501	502	503	504	505	506
507	508	509	510	511	512	513	514	515	516	517
518	519	520	521	522	523	524	525	526	527	528
529	530	531	532	533	534	535	536	537	538	539
540	541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560	561
562	563	564	565	566	567	568	569	570	571	572
573	574	575	576	577	578	579	580	581	582	583
584	585	586	587	588	589	590	591	592	593	594
595	596	597	598	599	600	601	602	603	604	605
606	607	608	609	610	611	612	613	614	615	616
617	618	619	620	621	622	623	624	625	626	627
628	629	630	631	632	633	634	635	636	637	638
639	640	641	642	643	644	645	646	647	648	649
650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671
672	673	674	675	676	677	678	679	680	681	682
683	684	685	686	687	688	689	690	691	692	693
694	695	696	697	698	699	700	701	702	703	704
705	706	707	708	709	710	711	712	713	714	715
716	717	718	719	720	721	722	723	724	725	726
727	728	729	730	731	732	733	734	735	736	737
738	739	740	741	742	743	744	745	746	747	748
749	750	751	752	753	754	755	756	757	758	759
760	761	762	763	764	765	766	767	768	769	770
771	772	773	774	775	776	777	778	779	780	781
782	783	784	785	786	787	788	789	790	791	792
793	794	795	796	797	798	799	800	801	802	803
804	805	806	807	808	809	810	811	812	813	814
815	816	817	818	819	820	821	822	823	824	825
826	827	828	829	830	831	832	833	834	835	836
837	838	839	840	841	842	843	844	845	846	847
848	849	850	851	852	853	854	855	856	857	858
859	860	861	862	863	864	865	866	867	868	869
870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891
892	893	894	895	896	897	898	899	900	901	902
903	904	905	906	907	908	909	910	911	912	913
914	915	916	917	918	919	920	921	922	923	924
925	926	927	928	929	930	931	932	933	934	935
936	937	938	939	940	941	942	943	944	945	946
947	948	949	950	951	952	953	954	955	956	957
958	959	960	961	962	963	964	965	966	967	968
969	970	971	972	973	974	975	976	977	978	979
980	981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000	1001

Long Term Average
Season Total
September 1 to October 31
July 1 to September 1
April 1 to July 1
October 1 to April 1
R. G. We - Dutch Bush Vine Area
Flora Size 1 x 10

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Dutch Nick Flat Outside Native 7/11/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x .48
	A	B	C	E	F	G	H	I
BOGR	1738.00	8.69	96.14	198	664.50	3.36	.38	318.96
POSE	23.00	.12	1.33	30	4.56	.15	.20	2.19
STCO	.50	T	----	1	.18	.18	.36	.09
ANNUAL FORBS	40.70	----	----	143	116.12	.81	2.85	55.74
LATE	4.20	.02	.22	18				
GIPU	4.80	.02	.22	36				
PLSP	13.60	.07	.77	79				
LEDE	4.20	.02	.22	42				
CHAL	11.60	.06	.66	63				
LUPU	1.70	.01	.11	4				
DEPI	.50	T	----	1				
GIL	.10	T	----	1				
PERENNIAL FORBS	5.70	----	----	15	13.70	.91	2.40	6.58
*OPPO	508.60	2.54	----	82				
VIAM	5.20	.03	.33	14				
TRA	.50	T	----	1				
TOTAL		9.04	100.00		799.06			383.56
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #4 - Dutch Nick Flat Exc.

October 15 to April 15 = 1.40

April 15 to July 1 = 4.16

July 1 to September 1 = .91

September 1 to October 15 = 2.52

Season Total = 8.99

Long Term Average = 7.09

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Farson Inside Native 8/15/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	166.00	8.30	----	13				
*CHVI	29.60	1.48	----	8				
AGSM	17.10	.86	47.77	16	18.83	1.18	1.10	90.38
STCO	10.50	.53	29.44	6	14.59	2.43	1.39	70.03
POSE	.50	.03	1.67	1	.37	.37	.74	1.78
SIHY	4.50	.23	12.78	4	6.02	1.51	1.34	28.90
CAR	.60	.03	1.67	2	.73	.37	1.22	3.50
ANNUAL FORBS	.70	----	----	7	1.16	.17	1.66	5.57
CHAL	.70	.04	2.22	7				
PERENNIAL FORBS	1.50	----	----	6	4.77	.80	3.18	22.90
EROV	1.00	.05	2.78	1				
SILI	.50	.03	1.67	5				
*PHHO	45.00	2.25	----	10				
TOTAL		1.80	100.00		46.47			223.06
*Not computed in percent composition								

Precipitation Data:

R. G. #2 - Farson

October 15 to April 15 = 2.07

April 15 to July 1 = 3.33

July 1 to September 1 = .94

September 1 to October 15 = 1.35

Season Total = 7.69

Long Term Average = 6.14

No. of the Survey	Name of the Survey	Area in Acres	Area in Roods	Area in Poles	Total Area in Acres, Roods, and Poles	Value in £	Value in s	Value in d	Total Value in £, s, and d
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57	57
58	58	58	58	58	58	58	58	58	58
59	59	59	59	59	59	59	59	59	59
60	60	60	60	60	60	60	60	60	60
61	61	61	61	61	61	61	61	61	61
62	62	62	62	62	62	62	62	62	62
63	63	63	63	63	63	63	63	63	63
64	64	64	64	64	64	64	64	64	64
65	65	65	65	65	65	65	65	65	65
66	66	66	66	66	66	66	66	66	66
67	67	67	67	67	67	67	67	67	67
68	68	68	68	68	68	68	68	68	68
69	69	69	69	69	69	69	69	69	69
70	70	70	70	70	70	70	70	70	70
71	71	71	71	71	71	71	71	71	71
72	72	72	72	72	72	72	72	72	72
73	73	73	73	73	73	73	73	73	73
74	74	74	74	74	74	74	74	74	74
75	75	75	75	75	75	75	75	75	75
76	76	76	76	76	76	76	76	76	76
77	77	77	77	77	77	77	77	77	77
78	78	78	78	78	78	78	78	78	78
79	79	79	79	79	79	79	79	79	79
80	80	80	80	80	80	80	80	80	80
81	81	81	81	81	81	81	81	81	81
82	82	82	82	82	82	82	82	82	82
83	83	83	83	83	83	83	83	83	83
84	84	84	84	84	84	84	84	84	84
85	85	85	85	85	85	85	85	85	85
86	86	86	86	86	86	86	86	86	86
87	87	87	87	87	87	87	87	87	87
88	88	88	88	88	88	88	88	88	88
89	89	89	89	89	89	89	89	89	89
90	90	90	90	90	90	90	90	90	90
91	91	91	91	91	91	91	91	91	91
92	92	92	92	92	92	92	92	92	92
93	93	93	93	93	93	93	93	93	93
94	94	94	94	94	94	94	94	94	94
95	95	95	95	95	95	95	95	95	95
96	96	96	96	96	96	96	96	96	96
97	97	97	97	97	97	97	97	97	97
98	98	98	98	98	98	98	98	98	98
99	99	99	99	99	99	99	99	99	99
100	100	100	100	100	100	100	100	100	100

The above is a list of the surveys which have been made by the Commission-
 ers of the General Land Office, and which are now in the hands of the
 Surveyors-General, for the purpose of being brought up to date, and
 of being made available for the use of the public.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Farson Outside Native 8/15/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	120.00	6.00	----	11				
*CHVI	42.50	2.13	----	10				
AGSM	22.50	1.13	83.71	16	17.45	1.09	.78	83.76
STCO	.50	.03	2.22	1	.54	.54	1.08	2.59
ORHY	1.00	.05	3.70	2	.28	.14	.28	1.34
SIHY	.50	.03	2.22	1	.05	.05	.10	.24
ANNUAL								
FORBS	1.90	----	----	9	1.84	.20	.97	8.83
LATE	.10	.01	.74	1				
CHAL	1.60	.08	5.93	8				
OESC	.20	.01	.74	2				
PERENNIAL								
FORBS	.10	----	----	1	.43	.43	4.30	2.06
SILI	.10	.01	.74	1				
*OPPO	1.00	.05	----	1				
*ARHO	1.50	.08	----	1				
*PHHO	18.50	.93	----	8				
TOTAL		1.35	100.00		20.59			98.82
*Not computed in percent composition								

Precipitation Data:

R. G. #2 - Farson
 October 15 to April 15 = 2.07
 April 15 to July 1 = 3.33
 July 1 to September 1 = .94
 September 1 to October 15 = 1.35
 Season Total = 7.69
 Long Term Average = 6.14

HERBAGE AND PRECIPITATION DATA FROM WISCONSIN HAIRGRASS EXPOSURE STUDIES (PLOTS LOCATED SYSTEMATICALLY AND WEIGHED ON DRY BASIS)

No. Plot 10

Plot Size 1 x 1

Values Determined by Area Estimates

Species	Percent Area	Average Percent	Percent Area	Percent Area	Percent Area	Percent Area	Percent Area	Percent Area
Grass	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Legumes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Grass	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Legumes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Long term average
Season total
September 1 to October 15
July 1 to September 1
April 15 to July 1
October 15 to April 15
= 1.15
= 1.05
= 1.15
= 1.15
= 1.15

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Granite Mt. Inside Native 8/21/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	279.00	13.95	----	12				
*CHVI	12.00	.60	----	3				
AGSM	15.70	.79	18.76	18	20.64	1.15	1.31	99.07
STCO	5.00	.25	5.94	2	3.06	1.53	.61	14.69
SIHY	1.00	.05	1.19	2	.60	.30	.60	2.88
POSE	58.50	2.93	69.59	19	32.23	1.70	.55	154.70
ANNUAL FORBS	.50	----	----	1	1.31	1.31	2.62	6.29
UNK	.50	.03	.71	1				
PERENNIAL FORBS	2.80	----	----	10	2.69	.27	.96	12.91
ASMI	.20	.01	.24	2				
ERCO	2.30	.12	2.85	7				
ARDR	.10	.01	.24	1				
TRI	.10	.01	.24	1				
CREL	.10	.01	.24	1				
*PHHO	14.50	.73	----	9				
TOTAL		4.21	100.00		60.53			290.54
*Not computed in percent composition								

Precipitation Data:

R. G. #6 - Granite Mt.
 October 15 to April 15 = 1.78
 April 15 to July 1 = 6.46
 July 1 to September 1 = 1.52
 September 1 to October 15 = 1.46
 Season Total = 11.22
 Long Term Average = 8.86

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Granite Mt. Outside Native 8/21/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	156.00	7.80	----	14				
*CHVI	4.00	.20	----	1				
AGSM	13.50	.68	12.21	19	24.12	1.27	1.79	115.78
POSE	83.50	4.18	75.03	19	22.59	1.19	.27	108.43
SIHY	.10	.01	.18	1	.29	.29	2.90	1.39
CAFI	4.00	.20	3.59	1	.25	.25	.06	1.20
ANNUAL FORBS	.50	----	----	1	.11	.11	.22	.53
CAMI	.50	.03	.54	1				
PERENNIAL FORBS	9.10	----	----	12	2.29	.19	.25	10.99
HAAC	6.00	.30	5.39	1				
ERCO	1.00	.05	.90	10				
ASMI	.50	.03	.54	1				
ARDR	.90	.05	.90	5				
AST	.50	.03	.54	1				
LES	.20	.01	.18	2				
*PHHO	10.30	.52	----	8				
TOTAL		5.57	100.00		49.65			238.32
*Not computed in percent composition								

Precipitation Data:

R. G. #6 - Granite Mt.

October 15 to April 15 = 1.78

April 15 to July 1 = 6.46

July 1 to September 1 = 1.52

September 1 to October 15 = 1.46

Season Total = 11.22

Long Term Average = 8.86

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Granite Mt. Inside Sprayed 8/21/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	91.50	4.58	----	6				
AGSM	35.10	1.76	42.62	20	88.72	4.44	2.53	425.86
POSE	45.00	2.25	54.47	17	31.67	1.86	.70	152.02
ORHY	1.00	.05	1.21	1	1.40	1.40	1.40	6.72
ANNUAL								
FORBS	.10	----	----	1	.10	.10	1.00	.48
CAS	.10	.01	.24	1				
PERENNIAL								
FORBS	1.10	----	----	3	.86	.29	.78	4.13
ASMI	.60	.03	.73	2				
CRE	.50	.03	.73	1				
*PHHO	3.10	.16	----	4				
TOTAL		4.13	100.00		122.75			589.21
*Not computed in percent composition								

Precipitation Data:

R. G. #6 - Granite Mt. = 1.78
 October 15 to April 15 = 6.46
 April 15 to July 1 = 1.52
 July 1 to September 1 = 1.46
 September 1 to October 15 = 11.22
 Season Total = 8.86
 Long Term Average

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Granite Mt. Outside Sprayed 8/21/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	10.00	.50	----	1				
*CHVI	5.00	.25	----	1				
SIHY	4.00	.20	3.81	3	5.73	1.91	1.43	27.50
POSE	52.00	2.60	49.53	20	25.10	1.26	.48	120.48
AGSM	45.60	2.28	43.43	20	75.47	3.77	1.66	362.26
KOCR	1.00	.05	.95	1	.38	.38	.38	1.82
PERENNIAL FORBS	2.20	----	----	4	1.59	.40	.72	7.63
ERCO	1.50	.08	1.52	2				
ASMI	.50	.03	.57	1				
AST	.20	.01	.19	2				
*PHHO	1.00	.05	----	1				
TOTAL		5.25	100.00		108.27			519.69
*Not computed in percent composition								

Precipitation Data:

R. G. #6 - Granite Mt.
 October 15 to April 15 = 1.78
 April 15 to July 1 = 6.46
 July 1 to September 1 = 1.52
 September 1 to October 15 = 1.46
 Season Total = 11.22
 Long Term Average = 8.86

HERBAGE AND PRECIPITATION DATA FROM WYQMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Halogeton Pastures Exc. #1 Inside Native 7/12/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	1865.90	9.33	86.63	158	729.52	4.62	.39	350.17
ARPE	158.00	.79	7.34	26	19.28	.74	.12	9.25
SIHY	69.80	.35	3.25	38	60.27	1.59	.86	28.93
POSE	36.20	.18	1.67	19	7.34	.39	.20	3.52
ANNUAL FORBS	22.80	----	----	99	32.91	.33	1.44	15.80
HAGL	7.50	.04	.37	33				
OESC	8.30	.04	.37	42				
LATE	3.90	.02	.19	27				
LEDE	.80	T	----	8				
GIPU	1.10	.01	.09	11				
DEPI	.20	T	----	2				
UNK	.50	T	----	5				
OEN	.50	T	----	1				
PERENNIAL FORBS	1.40	----	----	14	.64	.05	.46	.31
ALTE	1.30	.01	.09	13				
SPCO	.10	T	----	1				
*OPPO	.10	T	----	1				
TOTAL		10.77	100.00		849.96			359.98
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #24 - Halogeton Pastures #1

October 15 to April 15 = .78

April 15 to July 1 = 3.40

July 1 to September 1 = .28

September 1 to October 15 = 1.10

Season Total = 5.56

Long Term Average = 5.18

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Halogeton Pastures Exc. #2 Inside Native 7/12/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ARPE	3.00	.02	.14	1	.30	.30	.10	.14
ATNU	2656.10	13.28	89.90	170	1036.18	6.10	.39	497.37
POSE	109.00	.55	3.72	27	40.16	1.49	.37	19.28
SIHY	163.30	.82	5.55	42	185.59	4.42	1.14	89.08
ANNUAL FORBS	18.20	----	----	109	21.96	.20	1.21	10.54
HAGL	1.80	.01	.07	18				
LEDE	11.40	.06	.41	82				
DEPI	.20	T	----	2				
LATE	1.70	.01	.07	17				
GIPU	.60	T	----	6				
CHAL	.10	T	----	1				
OESC	.50	T	----	5				
OEN	.30	T	----	3				
UNK	1.60	.01	.07	16				
PERENNIAL FORBS	1.80	----	----	14	2.12	.15	1.18	1.02
ALTE	1.80	.01	.07	14				
*OPPO	7.10	.04	----	2				
TOTAL		14.77	100.00		1286.31			617.43
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #24 - Halogeton Pastures #2

October 15 to April 15 = .78

April 15 to July 1 = 3.40

July 1 to September 1 = .28

September 1 to October 15 = 1.10

Season Total = 5.56

Long Term Average = 5.18

HERNANDEZ AND PRECIPITATION DATA FROM WYOMING BALDWIN EXPOSURE STUDIES (PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OWN DRY BASIS)

No. Plot: 100

Plot Size 1 x 10

Cover Determined by Area Estimate

Native Inside Exc. 50	Native Area Percent	Average Percent Area	Percent Composition	Absolute Plot Frequency Base 100	Total Weight Gms/100 Sp. ft.	Average Weight Per Plot Occur- ences F + B	Wet Plot Wet Base F + B	Pounds Per Acres F x 100
A	B	C	D	E	F	G	H	I
ALPS	1.00	1.02	1.14	1	.30	.30	.10	.14
ATRU	10.10	11.28	89.90	130	1036.18	6.10	.32	497.37
POSH	100.00	1.22	3.72	23	60.10	1.49	.37	19.38
SLNY	103.30	1.82	2.22	41	182.22	4.42	1.16	89.08
ANNUAL FORBS	18.20	---	---	109	11.96	.30	1.21	10.24
WGL	1.80	1.01	1.07	18	---	---	---	---
LEDE	11.40	1.06	1.41	87	---	---	---	---
DEPT	1.20	1	---	2	---	---	---	---
LATE	1.10	1.01	1.07	17	---	---	---	---
WTH	1.80	1	---	6	---	---	---	---
CHAL	1.10	1	---	1	---	---	---	---
OSCO	1.20	1	---	2	---	---	---	---
OSN	1.20	1	---	3	---	---	---	---
LEN	1.80	1.01	1.07	18	---	---	---	---
PERENNIAL FORBS	1.80	---	---	14	2.12	.12	1.18	1.07
ALTE	1.20	1.01	1.07	18	---	---	---	---
ALPO	1.10	1.04	---	3	---	---	---	---
TOTAL	10.77	100.00	---	1286.21	---	---	---	617.47
Not composed in percent composition F + B								

Plot Size 1 x 10
No. Plot: 100
Cover Determined by Area Estimate
Precipitation Data:
1. 10. 100 - 100 percent base 100
2. 10. 100 - 100 percent base 100
3. 10. 100 - 100 percent base 100
4. 10. 100 - 100 percent base 100
5. 10. 100 - 100 percent base 100
6. 10. 100 - 100 percent base 100
7. 10. 100 - 100 percent base 100
8. 10. 100 - 100 percent base 100
9. 10. 100 - 100 percent base 100
10. 10. 100 - 100 percent base 100

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Halogeton Pastures Exc. #3 Inside Native 7/13/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	2263.30	11.32	98.34	144	959.52	6.66	.42	460.57
SIHY	22.10	.11	.96	9	50.20	5.58	2.27	24.10
ANNUAL FORBS	15.50	----	----	98	22.27	.23	1.44	10.69
LEDE	1.20	.01	.09	12				
OESC	3.90	.02	.17	31				
LATE	2.80	.01	.09	28				
HAGL	5.20	.03	.26	39				
GIPU	.70	T	----	7				
DEPI	.10	T	----	1				
UNK	1.20	T	----	12				
MATA	.40	T	----	4				
PERENNIAL FORBS	3.00	----	----	25	3.49	.14	1.16	1.68
ALTE	2.90	.01	.09	25				
TRA	.10	T	----	1				
*OPPO	9.00	.05	----	2				
TOTAL		11.51	100.00		1035.48			497.04
*Not computed in percent composition T - Trace								

Precipitation Data:

R. G. #24 - Halogeton Pastures #3

October 15 to April 15 = .78

April 15 to July 1 = 3.40

July 1 to September 1 = .28

September 1 to October 15 = 1.10

Season Total = 5.56

Long Term Average = 5.18

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Horse Creek AGSM Inside Native 7/29/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	86.00	4.30	----	5				
AGSM	29.00	1.45	62.77	20	93.05	4.65	3.21	446.64
POSE	12.80	.64	27.71	16	3.34	.21	.26	16.03
BRCO	.20	.01	.43	2	.41	.21	2.05	1.97
BRTE	.70	.04	1.73	3	1.38	.46	1.97	6.62
ANNUAL FORBS	3.20	----	----	16	3.52	.22	1.10	16.90
DEPI	1.30	.07	3.03	13				
CHAL	1.20	.06	2.60	8				
LARE	.60	.03	1.30	6				
UNK	.10	.01	.43	1				
PERENNIAL FORBS	----	----	----					
*OPPO	3.00	.15	----	1				
TOTAL		2.31	100.00		101.70			488.16
*Not computed in percent composition								

Precipitation Data:

R. G. #12 - Horse Creek
 October 15 to April 15 = 5.00
 April 15 to July 1 = 6.70
 July 1 to September 1 = .47
 September 1 to October 15 = 1.85
 Season Total = 14.02
 Long Term Average = 11.20

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Horse Creek AGSM Outside Native 7/29/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	102.00	5.10	----	8				
AGSM	14.90	.75	60.98	20	30.22	1.51	2.03	145.06
AGSP	3.00	.15	12.20	4	2.70	.68	.90	12.96
POSE	3.60	.18	14.63	5	1.86	.37	.52	8.93
BRCO	.50	.03	2.44	1	.96	.96	1.92	4.61
ANNUAL FORBS	1.20	----	----	9	1.88	.21	1.57	9.02
CHAL	.40	.02	1.63	4				
LEDE	.10	.01	.81	1				
DEPI	.50	.03	2.44	5				
SAKA	.10	.01	.81	1				
LARE	.10	.01	.81	1				
PERENNIAL FORBS	.70	----	----	3	1.66	.55	2.37	7.97
ALTE	.10	.01	.81	1				
UNK	.60	.03	2.44	2				
*OPPO	30.00	1.50	----	3				
*PHHO	18.00	.90	----	7				
TOTAL		1.23	100.00		39.28			188.55
*Not computed in percent composition								

Precipitation Data:

R. G. #12 - Horse Creek
 October 15 to April 15 = 5.00
 April 15 to July 1 = 6.70
 July 1 to September 1 = .47
 September 1 to October 15 = 1.85
 Season Total = 14.02
 Long Term Average = 11.20

STATION AND ELEVATION DATA FROM WINDING ROAD TO THE TOP OF THE MOUNTAIN

Station 1 to 10
 Station 11 to 20
 Station 21 to 30
 Station 31 to 40
 Station 41 to 50
 Station 51 to 60
 Station 61 to 70
 Station 71 to 80
 Station 81 to 90
 Station 91 to 100

Station	Elevation	Distance	Time	Speed	Altitude	Temperature	Humidity	Wind	Clouds
1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	100.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3	100.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
4	100.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
5	100.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
6	100.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
7	100.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
8	100.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
9	100.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
10	100.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
11	100.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
12	100.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
13	100.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
14	100.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
15	100.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
16	100.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
17	100.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
18	100.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
19	100.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
20	100.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
21	100.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22	100.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
23	100.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
24	100.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
25	100.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
26	100.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
27	100.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
28	100.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
29	100.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
30	100.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
31	100.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32	100.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
33	100.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
34	100.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
35	100.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
36	100.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
37	100.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
38	100.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
39	100.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
40	100.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
41	100.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
42	100.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
43	100.0	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
44	100.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
45	100.0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
46	100.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
47	100.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
48	100.0	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
49	100.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
50	100.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
51	100.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
52	100.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
53	100.0	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
54	100.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
55	100.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
56	100.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
57	100.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
58	100.0	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
59	100.0	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
60	100.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
61	100.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
62	100.0	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
63	100.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
64	100.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
65	100.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
66	100.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
67	100.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
68	100.0	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
69	100.0	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
70	100.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
71	100.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
72	100.0	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
73	100.0	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
74	100.0	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
75	100.0	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
76	100.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
77	100.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
78	100.0	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
79	100.0	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
80	100.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
81	100.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
82	100.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
83	100.0	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
84	100.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
85	100.0	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
86	100.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
87	100.0	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
88	100.0	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
89	100.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
90	100.0	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
91	100.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
92	100.0	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
93	100.0	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
94	100.0	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
95	100.0	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
96	100.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
97	100.0	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
98	100.0	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
99	100.0	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
100	100.0	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9

Station 1 to 10
 Station 11 to 20
 Station 21 to 30
 Station 31 to 40
 Station 41 to 50
 Station 51 to 60
 Station 61 to 70
 Station 71 to 80
 Station 81 to 90
 Station 91 to 100

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Horse Creek AGSP Inside Native 7/29/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	104.00	5.20	----	8				
AGSP	139.80	6.99	93.96	20	98.76	4.94	.71	474.05
POSE	6.00	.30	4.04	6	1.15	.19	.19	5.52
AGSM	2.00	.10	1.34	4	4.88	1.22	2.44	23.42
ANNUAL								
FORBS	.70	----	----	6	2.02	.34	2.89	9.70
DEPI	.50	.03	.40	5				
LEDE	.10	.01	.13	1				
CHAL	.10	.01	.13	1				
PERENNIAL								
FORBS	----	----	----					
*PHHO	.10	.01	----	1				
*OPPO	1.00	.05	----	1				
TOTAL		7.44	100.00		106.81			512.69
*Not computed in percent composition								

Precipitation Data:

R. G. #12 - Horse Creek

October 15 to April 15 = 5.00

April 15 to July 1 = 6.70

July 1 to September 1 = .47

September 1 to October 15 = 1.85

Season Total = 14.02

Long Term Average = 11.20

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Horse Creek AGSP Outside Native 7/29/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	331.00	16.55	----	10				
*GUSA	8.40	.42	----	6				
AGSM	6.50	.33	28.45	14	12.42	.89	1.91	59.62
POSE	4.60	.23	19.83	7	.68	.10	.15	3.26
AGSP	9.00	.45	38.80	8	6.48	.81	.72	31.10
ANNUAL FORBS	.80	----	----	4	3.92	.98	4.90	18.82
CHAL	.20	.01	.86	2				
DEPI	.30	.02	1.72	3				
LARE	.10	.01	.86	1				
LEDE	.10	.01	.86	1				
SAKA	.10	.01	.86	1				
PERENNIAL FORBS	1.60	----	----	5	11.10	2.22	6.94	53.28
SPCO	.50	.03	2.59	5				
CRBR	.10	.01	.86	1				
HAAC	1.00	.05	4.31	1				
*PHHO	4.00	.20	----	3				
*OPPO	3.00	.15	----	1				
TOTAL		1.16	100.00		34.60			166.08
*Not computed in percent composition								

Precipitation Data:

R. G. #12 - Horse Creek
 October 15 to April 15 = 5.00
 April 15 to July 1 = 6.70
 July 1 to September 1 = .47
 September 1 to October 15 = 1.85
 Season Total = 14.02
 Long Term Average = 11.20

REPORT ON THE INVESTIGATION OF THE CAUSE OF THE
FLOODING OF THE RIVER IN THE AREA OF THE DAM

Page 1 of 1
Date: 10/10/10
Project: Investigation of the Cause of the Flooding of the River in the Area of the Dam

Station	Time	Water Level (ft)	Flow (cfs)	Wind Speed (mph)	Direction	Temperature (°F)	Humidity (%)	Pressure (in. Hg)	Notes
1	10:00	10.0	100	10	SE	75	80	30.0	Clear
2	10:15	10.5	110	12	SE	76	81	30.1	Clear
3	10:30	11.0	120	15	SE	77	82	30.2	Clear
4	10:45	11.5	130	18	SE	78	83	30.3	Clear
5	11:00	12.0	140	20	SE	79	84	30.4	Clear
6	11:15	12.5	150	22	SE	80	85	30.5	Clear
7	11:30	13.0	160	25	SE	81	86	30.6	Clear
8	11:45	13.5	170	28	SE	82	87	30.7	Clear
9	12:00	14.0	180	30	SE	83	88	30.8	Clear
10	12:15	14.5	190	32	SE	84	89	30.9	Clear
11	12:30	15.0	200	35	SE	85	90	31.0	Clear
12	12:45	15.5	210	38	SE	86	91	31.1	Clear
13	13:00	16.0	220	40	SE	87	92	31.2	Clear
14	13:15	16.5	230	42	SE	88	93	31.3	Clear
15	13:30	17.0	240	45	SE	89	94	31.4	Clear
16	13:45	17.5	250	48	SE	90	95	31.5	Clear
17	14:00	18.0	260	50	SE	91	96	31.6	Clear
18	14:15	18.5	270	52	SE	92	97	31.7	Clear
19	14:30	19.0	280	55	SE	93	98	31.8	Clear
20	14:45	19.5	290	58	SE	94	99	31.9	Clear
21	15:00	20.0	300	60	SE	95	100	32.0	Clear
22	15:15	20.5	310	62	SE	96	100	32.1	Clear
23	15:30	21.0	320	65	SE	97	100	32.2	Clear
24	15:45	21.5	330	68	SE	98	100	32.3	Clear
25	16:00	22.0	340	70	SE	99	100	32.4	Clear
26	16:15	22.5	350	72	SE	100	100	32.5	Clear
27	16:30	23.0	360	75	SE	100	100	32.6	Clear
28	16:45	23.5	370	78	SE	100	100	32.7	Clear
29	17:00	24.0	380	80	SE	100	100	32.8	Clear
30	17:15	24.5	390	82	SE	100	100	32.9	Clear
31	17:30	25.0	400	85	SE	100	100	33.0	Clear
32	17:45	25.5	410	88	SE	100	100	33.1	Clear
33	18:00	26.0	420	90	SE	100	100	33.2	Clear
34	18:15	26.5	430	92	SE	100	100	33.3	Clear
35	18:30	27.0	440	95	SE	100	100	33.4	Clear
36	18:45	27.5	450	98	SE	100	100	33.5	Clear
37	19:00	28.0	460	100	SE	100	100	33.6	Clear
38	19:15	28.5	470	102	SE	100	100	33.7	Clear
39	19:30	29.0	480	105	SE	100	100	33.8	Clear
40	19:45	29.5	490	108	SE	100	100	33.9	Clear
41	20:00	30.0	500	110	SE	100	100	34.0	Clear
42	20:15	30.5	510	112	SE	100	100	34.1	Clear
43	20:30	31.0	520	115	SE	100	100	34.2	Clear
44	20:45	31.5	530	118	SE	100	100	34.3	Clear
45	21:00	32.0	540	120	SE	100	100	34.4	Clear
46	21:15	32.5	550	122	SE	100	100	34.5	Clear
47	21:30	33.0	560	125	SE	100	100	34.6	Clear
48	21:45	33.5	570	128	SE	100	100	34.7	Clear
49	22:00	34.0	580	130	SE	100	100	34.8	Clear
50	22:15	34.5	590	132	SE	100	100	34.9	Clear
51	22:30	35.0	600	135	SE	100	100	35.0	Clear
52	22:45	35.5	610	138	SE	100	100	35.1	Clear
53	23:00	36.0	620	140	SE	100	100	35.2	Clear
54	23:15	36.5	630	142	SE	100	100	35.3	Clear
55	23:30	37.0	640	145	SE	100	100	35.4	Clear
56	23:45	37.5	650	148	SE	100	100	35.5	Clear
57	24:00	38.0	660	150	SE	100	100	35.6	Clear
58	24:15	38.5	670	152	SE	100	100	35.7	Clear
59	24:30	39.0	680	155	SE	100	100	35.8	Clear
60	24:45	39.5	690	158	SE	100	100	35.9	Clear
61	25:00	40.0	700	160	SE	100	100	36.0	Clear
62	25:15	40.5	710	162	SE	100	100	36.1	Clear
63	25:30	41.0	720	165	SE	100	100	36.2	Clear
64	25:45	41.5	730	168	SE	100	100	36.3	Clear
65	26:00	42.0	740	170	SE	100	100	36.4	Clear
66	26:15	42.5	750	172	SE	100	100	36.5	Clear
67	26:30	43.0	760	175	SE	100	100	36.6	Clear
68	26:45	43.5	770	178	SE	100	100	36.7	Clear
69	27:00	44.0	780	180	SE	100	100	36.8	Clear
70	27:15	44.5	790	182	SE	100	100	36.9	Clear
71	27:30	45.0	800	185	SE	100	100	37.0	Clear
72	27:45	45.5	810	188	SE	100	100	37.1	Clear
73	28:00	46.0	820	190	SE	100	100	37.2	Clear
74	28:15	46.5	830	192	SE	100	100	37.3	Clear
75	28:30	47.0	840	195	SE	100	100	37.4	Clear
76	28:45	47.5	850	198	SE	100	100	37.5	Clear
77	29:00	48.0	860	200	SE	100	100	37.6	Clear
78	29:15	48.5	870	202	SE	100	100	37.7	Clear
79	29:30	49.0	880	205	SE	100	100	37.8	Clear
80	29:45	49.5	890	208	SE	100	100	37.9	Clear
81	30:00	50.0	900	210	SE	100	100	38.0	Clear
82	30:15	50.5	910	212	SE	100	100	38.1	Clear
83	30:30	51.0	920	215	SE	100	100	38.2	Clear
84	30:45	51.5	930	218	SE	100	100	38.3	Clear
85	31:00	52.0	940	220	SE	100	100	38.4	Clear
86	31:15	52.5	950	222	SE	100	100	38.5	Clear
87	31:30	53.0	960	225	SE	100	100	38.6	Clear
88	31:45	53.5	970	228	SE	100	100	38.7	Clear
89	32:00	54.0	980	230	SE	100	100	38.8	Clear
90	32:15	54.5	990	232	SE	100	100	38.9	Clear
91	32:30	55.0	1000	235	SE	100	100	39.0	Clear
92	32:45	55.5	1010	238	SE	100	100	39.1	Clear
93	33:00	56.0	1020	240	SE	100	100	39.2	Clear
94	33:15	56.5	1030	242	SE	100	100	39.3	Clear
95	33:30	57.0	1040	245	SE	100	100	39.4	Clear
96	33:45	57.5	1050	248	SE	100	100	39.5	Clear
97	34:00	58.0	1060	250	SE	100	100	39.6	Clear
98	34:15	58.5	1070	252	SE	100	100	39.7	Clear
99	34:30	59.0	1080	255	SE	100	100	39.8	Clear
100	34:45	59.5	1090	258	SE	100	100	39.9	Clear
101	35:00	60.0	1100	260	SE	100	100	40.0	Clear
102	35:15	60.5	1110	262	SE	100	100	40.1	Clear
103	35:30	61.0	1120	265	SE	100	100	40.2	Clear
104	35:45	61.5	1130	268	SE	100	100	40.3	Clear
105	36:00	62.0	1140	270	SE	100	100	40.4	Clear
106	36:15	62.5	1150	272	SE	100	100	40.5	Clear
107	36:30	63.0	1160	275	SE	100	100	40.6	Clear
108	36:45	63.5	1170	278	SE	100	100	40.7	Clear
109	37:00	64.0	1180	280	SE	100	100	40.8	Clear
110	37:15	64.5	1190	282	SE	100	100	40.9	Clear
111	37:30	65.0	1200	285	SE	100	100	41.0	Clear
112	37:45	65.5	1210	288	SE	100	100	41.1	Clear
113	38:00	66.0	1220	290	SE	100	100	41.2	Clear
114	38:15	66.5	1230	292	SE	100	100	41.3	Clear
115	38:30	67.0	1240	295	SE	100	100	41.4	Clear
116	38:45	67.5	1250	298	SE	100	100	41.5	Clear
117	39:00	68.0	1260	300	SE	100	100	41.6	Clear
118	39:15	68.5	1270	302	SE	100	100	41.7	Clear
119	39:30	69.0	1280	305	SE	100	100	41.8	Clear
120	39:45	69.5	1290	308	SE	100	100	41.9	Clear
121	40:00	70.0	1300	310	SE	100	100	42.0	Clear
122	40:15	70.5	1310	312	SE	100	100	42.1	Clear
123	40:30	71.0	1320	315	SE	100	100	42.2	Clear
124	40:45	71.5	1330	318	SE	100	100	42.3	Clear
125	41:00	72.0	1340	320	SE	100	100	42.4	Clear
126	41:15	72.5	1350	322	SE	100	100	42.5	Clear
127	41:30	73.0	1360	325	SE	100	100	42.6	Clear
128	41:45	73.5	1370	328	SE	100	100	42.7	Clear
129	42:00	74.0	1380	330	SE	100	100	42.8	Clear
130	42:15	74.5	1390	332	SE	100	100	42.9	Clear
131	42:30	75.0	1400	335	SE	100	100	43.0	Clear
132	42:45	75.5	1410	338	SE	100	100	43.1	Clear
133	43:00	76.0	1420	340	SE	100	100	43.2	Clear
134	43:15	76.5	1430	342	SE	100	100	43.3	Clear
135	43:30	77.0	1440	345	SE	100	100	43.4	Clear
136	43:45	77.5	1450	348	SE	100	100	43.5	Clear
137	44:00	78.0	1460	350	SE	100	100	43.6	Clear
138	44:15	78.5	1470	352	SE	100	100	43.7	Clear
139	44:30	79.0	1480	355	SE	100	100	43.8	Clear
140	44:45	79.5	1490	358	SE	100	100	43.9	Clear
141	45:00	80.0	1500	360	SE	100	100	44.0	Clear
142	45:15	80.5	1510	362	SE	100	100	44.1	Clear
143	45:30	81.0	1520	365	SE				

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kane Deer Inside Native 8/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*JUSC	403.00	20.15	----	10				
AGGR	3.00	.15	35.72	2	2.26	1.13	.75	10.85
POSE	2.50	.13	30.95	3	.41	.14	.16	1.97
PERENNIAL FORBS	2.60	----	----	5	.53	.11	.20	2.54
GISP	2.10	.11	26.19	4				
HYAC	.50	.03	7.14	1				
*OPPO	2.00	.10	----	1				
*PHHO	1.30	.07	----	4				
TOTAL		.42	100.00		3.20			15.36
*Not computed in percent composition								

Precipitation Data:

R. G. #24 - Kane Deer Exc.

October 15 to April 15 = 5.27

April 15 to July 1 = 5.73

July 1 to September 1 = .60

September 1 to October 15 = 2.82

Season Total = 14.42

Long Term Average = 11.10

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kane Deer Outside Native 8/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*JUSC	331.00	16.55	----	8				
GUSA	.50	.03	3.57	1	.24	.24	.48	1.15
POSE	1.60	.08	9.52	3	.51	.17	.32	2.45
AGGR	2.60	.13	15.48	4	3.58	.90	1.38	17.18
STCO	1.00	.05	5.95	1	.56	.56	.56	2.69
ANNUAL FORBS	.10	----	----	1	.05	.05	.50	.24
DEPI	.10	.01	1.19	1				
PERENNIAL FORBS	10.60	----	----	13	6.80	.52	.64	32.64
PHAU	3.20	.16	19.05	6				
ERCO	.70	.04	4.76	7				
PASE	.50	.03	3.57	1				
GISP	2.60	.13	15.48	5				
PEAL	3.60	.18	21.43	8				
*ARHO	1.00	.05	----	1				
TOTAL		.84	100.00		11.74			56.35
*Not computed in percent composition								

Precipitation Data:

R. G. #24 - Kane Deer Exc.

October 15 to April 15 = 5.27

April 15 to July 1 = 5.73

July 1 to September 1 = .60

September 1 to October 15 = 2.82

Season Total = 14.42

Long Term Average = 11.10

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kane Deer Inside Sprayed 8/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARNO	52.00	2.60	----	2				
POSE	1.60	.08	10.53	3	.39	.13	.24	1.87
AGGR	1.60	.08	10.53	3	.28	.09	.18	1.34
AGSP	2.50	.13	17.10	2	2.42	1.21	.97	11.62
ANNUAL FORBS	3.00	----	----	7	6.44	.92	2.15	30.91
DEPI	1.60	.08	10.53	4				
CHAL	.10	.01	1.32	1				
CAMI	1.00	.05	6.58	1				
CHTE	.10	.01	1.32	1				
UNK	.20	.01	1.32	2				
PERENNIAL FORBS	6.10	----	----	9	3.82	.42	.63	18.34
PEAL	1.00	.05	6.58	1				
ERCO	.20	.01	1.32	2				
GISP	2.50	.13	17.10	5				
PHAU	2.40	.12	15.77	5				
*ARHO	.10	.01	----	1				
TOTAL		.76	100.00		13.35			64.08
*Not computed in percent composition								

Precipitation Data:

R. G. #24 - Kane Deer Exc.

October 15 to April 15 = 5.27

April 15 to July 1 = 5.73

July 1 to September 1 = .60

September 1 to October 15 = 2.82

Season Total = 14.42

Long Term Average = 11.10

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kane Deer Outside Sprayed 8/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight. Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
POSE	6.00	.30	24.78	4	2.94	.74	.49	14.11
AGGR	8.50	.43	35.53	5	15.84	3.17	1.86	76.03
ANNUAL FORBS	3.00	----	----	10	4.88	.49	1.63	23.42
DEPI	1.80	.09	7.44	6				
LATE	.60	.03	2.48	2				
CAMI	.50	.03	2.48	5				
UNK	.10	.01	.83	1				
PERENNIAL FORBS	6.00	----	----	9	6.38	.71	1.06	30.62
PASE	1.00	.05	4.13	1				
ERCO	.10	.01	.83	1				
PEAL	1.10	.06	4.96	2				
GISP	3.00	.15	12.40	5				
PHAU	.70	.04	3.31	3				
TAOF	.10	.01	.83	1				
*ARHO	.20	.01	----	2				
TOTAL		1.21	100.00		30.04			144.18
*Not computed in percent composition								

Precipitation Data:

R. G. #24 - Kane Deer Exc.

October 15 to April 15 = 5.27

April 15 to July 1 = 5.73

July 1 to September 1 = .60

September 1 to October 15 = 2.82

Season Total = 14.42

Long Term Average = 11.10

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kirby Creek Inside Native 7/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt/ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*SAVE	122.50	6.13	----	6				
AGSM	3.90	.20	4.87	9	40.78	4.53	10.46	195.74
POSE	35.60	1.78	43.31	12	18.50	1.54	.52	88.80
BRTE	18.00	.90	21.90	16	75.58	4.72	4.20	362.78
HOPU	1.00	.05	1.22	1	2.44	2.44	2.44	11.71
ANNUAL FORBS	23.20	----	----	20	230.47	11.52	9.93	1106.26
LEPE	17.60	.88	21.41	20				
EUSE	1.00	.05	1.22	6				
ATAR	1.40	.07	1.70	10				
GIPU	.20	.01	.24	2				
LARE	.30	.02	.48	3				
CHAL	.50	.03	.73	1				
SAKA	1.10	.06	1.46	7				
CAMI	.10	.01	.24	1				
KOSC	1.00	.05	1.22	1				
PERENNIAL FORBS	----	----	----					
*OPPO	8.00	.40	----	1				
TOTAL		4.11	100.00		367.77			1765.29
*Not computed in percent composition								

Precipitation Data:

R. G. #77 - Kirby Creek Exc.

October 15 to April 15 = 2.51

April 15 to July 1 = 8.10

July 1 to September 1 = .85

September 1 to October 15 = 1.45

Season Total = 12.91

Long Term Average = 9.22

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Kirby Creek Outside Native 7/17/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*SAVE	32.20	1.61	----	4				
SPAI	4.00	.20	10.10	1	7.59	7.59	1.90	36.43
BRTE	4.90	.25	12.63	14	25.36	1.81	5.18	121.73
POSE	1.10	.06	3.03	2	1.51	.76	1.37	7.25
AGSM	18.10	.91	45.95	13	145.12	11.16	8.02	696.58
HOPU	.10	.01	.51	1	.62	.62	6.20	2.98
ANNUAL FORBS	10.40	----	----	20	138.70	6.94	13.34	665.76
LEPE	6.60	.33	16.66	20				
ATAR	2.70	.14	7.07	11				
SAKA	.30	.02	1.01	3				
EUSE	.40	.02	1.01	4				
LARE	.30	.02	1.01	3				
UNK	.10	.01	.51	1				
PERENNIAL FORBS	.20	----	----	2	.90	.45	4.50	4.32
*OPPO	5.50	.28	----	2				
SPCO	.20	.01	.51	2				
TOTAL		1.98	100.00		319.80			1535.05
*Not computed in percent composition								

Precipitation Data:

R. G. #77 - Kirby Creek Exc.

October 15 to April 15 = 2.51
 April 15 to July 1 = 8.10
 July 1 to September 1 = .85
 September 1 to October 15 = 1.45
 Season Total = 12.91
 Long Term Average = 9.22

RESEARCH AND DEVELOPMENT DATA FROM THE NATIONAL BUREAU OF STANDARDS
 OFFICE OF RESEARCH AND DEVELOPMENT, NATIONAL BUREAU OF STANDARDS

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RESEARCH AND DEVELOPMENT DATA FROM THE NATIONAL BUREAU OF STANDARDS

Project Name	Project Number	Project Description	Project Status	Project Start Date	Project End Date	Project Budget	Project Actual Cost	Project Variance
Project A	101	Development of New Product	Completed	1980-01-01	1980-12-31	\$100,000	\$95,000	\$5,000
Project B	102	Development of New Product	In Progress	1981-01-01	1981-12-31	\$150,000	\$120,000	\$30,000
Project C	103	Development of New Product	On Hold	1982-01-01	1982-12-31	\$200,000	\$180,000	\$20,000
Project D	104	Development of New Product	Completed	1983-01-01	1983-12-31	\$250,000	\$240,000	\$10,000
Project E	105	Development of New Product	In Progress	1984-01-01	1984-12-31	\$300,000	\$280,000	\$20,000
Project F	106	Development of New Product	On Hold	1985-01-01	1985-12-31	\$350,000	\$330,000	\$20,000
Project G	107	Development of New Product	Completed	1986-01-01	1986-12-31	\$400,000	\$380,000	\$20,000
Project H	108	Development of New Product	In Progress	1987-01-01	1987-12-31	\$450,000	\$430,000	\$20,000
Project I	109	Development of New Product	On Hold	1988-01-01	1988-12-31	\$500,000	\$480,000	\$20,000
Project J	110	Development of New Product	Completed	1989-01-01	1989-12-31	\$550,000	\$530,000	\$20,000
Project K	111	Development of New Product	In Progress	1990-01-01	1990-12-31	\$600,000	\$580,000	\$20,000
Project L	112	Development of New Product	On Hold	1991-01-01	1991-12-31	\$650,000	\$630,000	\$20,000
Project M	113	Development of New Product	Completed	1992-01-01	1992-12-31	\$700,000	\$680,000	\$20,000
Project N	114	Development of New Product	In Progress	1993-01-01	1993-12-31	\$750,000	\$730,000	\$20,000
Project O	115	Development of New Product	On Hold	1994-01-01	1994-12-31	\$800,000	\$780,000	\$20,000
Project P	116	Development of New Product	Completed	1995-01-01	1995-12-31	\$850,000	\$830,000	\$20,000
Project Q	117	Development of New Product	In Progress	1996-01-01	1996-12-31	\$900,000	\$880,000	\$20,000
Project R	118	Development of New Product	On Hold	1997-01-01	1997-12-31	\$950,000	\$930,000	\$20,000
Project S	119	Development of New Product	Completed	1998-01-01	1998-12-31	\$1,000,000	\$980,000	\$20,000
Project T	120	Development of New Product	In Progress	1999-01-01	1999-12-31	\$1,050,000	\$1,030,000	\$20,000
Project U	121	Development of New Product	On Hold	2000-01-01	2000-12-31	\$1,100,000	\$1,080,000	\$20,000
Project V	122	Development of New Product	Completed	2001-01-01	2001-12-31	\$1,150,000	\$1,130,000	\$20,000
Project W	123	Development of New Product	In Progress	2002-01-01	2002-12-31	\$1,200,000	\$1,180,000	\$20,000
Project X	124	Development of New Product	On Hold	2003-01-01	2003-12-31	\$1,250,000	\$1,230,000	\$20,000
Project Y	125	Development of New Product	Completed	2004-01-01	2004-12-31	\$1,300,000	\$1,280,000	\$20,000
Project Z	126	Development of New Product	In Progress	2005-01-01	2005-12-31	\$1,350,000	\$1,330,000	\$20,000
Project AA	127	Development of New Product	On Hold	2006-01-01	2006-12-31	\$1,400,000	\$1,380,000	\$20,000
Project AB	128	Development of New Product	Completed	2007-01-01	2007-12-31	\$1,450,000	\$1,430,000	\$20,000
Project AC	129	Development of New Product	In Progress	2008-01-01	2008-12-31	\$1,500,000	\$1,480,000	\$20,000
Project AD	130	Development of New Product	On Hold	2009-01-01	2009-12-31	\$1,550,000	\$1,530,000	\$20,000
Project AE	131	Development of New Product	Completed	2010-01-01	2010-12-31	\$1,600,000	\$1,580,000	\$20,000
Project AF	132	Development of New Product	In Progress	2011-01-01	2011-12-31	\$1,650,000	\$1,630,000	\$20,000
Project AG	133	Development of New Product	On Hold	2012-01-01	2012-12-31	\$1,700,000	\$1,680,000	\$20,000
Project AH	134	Development of New Product	Completed	2013-01-01	2013-12-31	\$1,750,000	\$1,730,000	\$20,000
Project AI	135	Development of New Product	In Progress	2014-01-01	2014-12-31	\$1,800,000	\$1,780,000	\$20,000
Project AJ	136	Development of New Product	On Hold	2015-01-01	2015-12-31	\$1,850,000	\$1,830,000	\$20,000
Project AK	137	Development of New Product	Completed	2016-01-01	2016-12-31	\$1,900,000	\$1,880,000	\$20,000
Project AL	138	Development of New Product	In Progress	2017-01-01	2017-12-31	\$1,950,000	\$1,930,000	\$20,000
Project AM	139	Development of New Product	On Hold	2018-01-01	2018-12-31	\$2,000,000	\$1,980,000	\$20,000
Project AN	140	Development of New Product	Completed	2019-01-01	2019-12-31	\$2,050,000	\$2,030,000	\$20,000
Project AO	141	Development of New Product	In Progress	2020-01-01	2020-12-31	\$2,100,000	\$2,080,000	\$20,000
Project AP	142	Development of New Product	On Hold	2021-01-01	2021-12-31	\$2,150,000	\$2,130,000	\$20,000
Project AQ	143	Development of New Product	Completed	2022-01-01	2022-12-31	\$2,200,000	\$2,180,000	\$20,000
Project AR	144	Development of New Product	In Progress	2023-01-01	2023-12-31	\$2,250,000	\$2,230,000	\$20,000
Project AS	145	Development of New Product	On Hold	2024-01-01	2024-12-31	\$2,300,000	\$2,280,000	\$20,000
Project AT	146	Development of New Product	Completed	2025-01-01	2025-12-31	\$2,350,000	\$2,330,000	\$20,000
Project AU	147	Development of New Product	In Progress	2026-01-01	2026-12-31	\$2,400,000	\$2,380,000	\$20,000
Project AV	148	Development of New Product	On Hold	2027-01-01	2027-12-31	\$2,450,000	\$2,430,000	\$20,000
Project AW	149	Development of New Product	Completed	2028-01-01	2028-12-31	\$2,500,000	\$2,480,000	\$20,000
Project AX	150	Development of New Product	In Progress	2029-01-01	2029-12-31	\$2,550,000	\$2,530,000	\$20,000
Project AY	151	Development of New Product	On Hold	2030-01-01	2030-12-31	\$2,600,000	\$2,580,000	\$20,000
Project AZ	152	Development of New Product	Completed	2031-01-01	2031-12-31	\$2,650,000	\$2,630,000	\$20,000
Project BA	153	Development of New Product	In Progress	2032-01-01	2032-12-31	\$2,700,000	\$2,680,000	\$20,000
Project BB	154	Development of New Product	On Hold	2033-01-01	2033-12-31	\$2,750,000	\$2,730,000	\$20,000
Project BC	155	Development of New Product	Completed	2034-01-01	2034-12-31	\$2,800,000	\$2,780,000	\$20,000
Project BD	156	Development of New Product	In Progress	2035-01-01	2035-12-31	\$2,850,000	\$2,830,000	\$20,000
Project BE	157	Development of New Product	On Hold	2036-01-01	2036-12-31	\$2,900,000	\$2,880,000	\$20,000
Project BF	158	Development of New Product	Completed	2037-01-01	2037-12-31	\$2,950,000	\$2,930,000	\$20,000
Project BG	159	Development of New Product	In Progress	2038-01-01	2038-12-31	\$3,000,000	\$2,980,000	\$20,000
Project BH	160	Development of New Product	On Hold	2039-01-01	2039-12-31	\$3,050,000	\$3,030,000	\$20,000
Project BI	161	Development of New Product	Completed	2040-01-01	2040-12-31	\$3,100,000	\$3,080,000	\$20,000
Project BJ	162	Development of New Product	In Progress	2041-01-01	2041-12-31	\$3,150,000	\$3,130,000	\$20,000
Project BK	163	Development of New Product	On Hold	2042-01-01	2042-12-31	\$3,200,000	\$3,180,000	\$20,000
Project BL	164	Development of New Product	Completed	2043-01-01	2043-12-31	\$3,250,000	\$3,230,000	\$20,000
Project BM	165	Development of New Product	In Progress	2044-01-01	2044-12-31	\$3,300,000	\$3,280,000	\$20,000
Project BN	166	Development of New Product	On Hold	2045-01-01	2045-12-31	\$3,350,000	\$3,330,000	\$20,000
Project BO	167	Development of New Product	Completed	2046-01-01	2046-12-31	\$3,400,000	\$3,380,000	\$20,000
Project BP	168	Development of New Product	In Progress	2047-01-01	2047-12-31	\$3,450,000	\$3,430,000	\$20,000
Project BQ	169	Development of New Product	On Hold	2048-01-01	2048-12-31	\$3,500,000	\$3,480,000	\$20,000
Project BR	170	Development of New Product	Completed	2049-01-01	2049-12-31	\$3,550,000	\$3,530,000	\$20,000
Project BS	171	Development of New Product	In Progress	2050-01-01	2050-12-31	\$3,600,000	\$3,580,000	\$20,000
Project BT	172	Development of New Product	On Hold	2051-01-01	2051-12-31	\$3,650,000	\$3,630,000	\$20,000
Project BU	173	Development of New Product	Completed	2052-01-01	2052-12-31	\$3,700,000	\$3,680,000	\$20,000
Project BV	174	Development of New Product	In Progress	2053-01-01	2053-12-31	\$3,750,000	\$3,730,000	\$20,000
Project BW	175	Development of New Product	On Hold	2054-01-01	2054-12-31	\$3,800,000	\$3,780,000	\$20,000
Project BX	176	Development of New Product	Completed	2055-01-01	2055-12-31	\$3,850,000	\$3,830,000	\$20,000
Project BY	177	Development of New Product	In Progress	2056-01-01	2056-12-31	\$3,900,000	\$3,880,000	\$20,000
Project BZ	178	Development of New Product	On Hold	2057-01-01	2057-12-31	\$3,950,000	\$3,930,000	\$20,000
Project CA	179	Development of New Product	Completed	2058-01-01	2058-12-31	\$4,000,000	\$3,980,000	\$20,000
Project CB	180	Development of New Product	In Progress	2059-01-01	2059-12-31	\$4,050,000	\$4,030,000	\$20,000
Project CC	181	Development of New Product	On Hold	2060-01-01	2060-12-31	\$4,100,000	\$4,080,000	\$20,000
Project CD	182	Development of New Product	Completed	2061-01-01	2061-12-31	\$4,150,000	\$4,130,000	\$20,000
Project CE	183	Development of New Product	In Progress	2062-01-01	2062-12-31	\$4,200,000	\$4,180,000	\$20,000
Project CF	184	Development of New Product	On Hold	2063-01-01	2063-12-31	\$4,250,000	\$4,230,000	\$20,000
Project CG	185	Development of New Product	Completed	2064-01-01	2064-12-31	\$4,300,000	\$4,280,000	\$20,000
Project CH	186	Development of New Product	In Progress	2065-01-01	2065-12-31	\$4,350,000	\$4,330,000	\$20,000
Project CI	187	Development of New Product	On Hold	2066-01-01	2066-12-31	\$4,400,000	\$4,380,000	\$20,000
Project CJ	188	Development of New Product	Completed	2067-01-01	2067-12-31	\$4,450,000	\$4,430,000	\$20,000
Project CK	189	Development of New Product	In Progress	2068-01-01	2068-12-31	\$4,500,000	\$4,480,000	\$20,000
Project CL	190	Development of New Product	On Hold	2069-01-01	2069-12-31	\$4,550,000	\$4,530,000	\$20,000
Project CM	191	Development of New Product	Completed	2070-01-01	2070-12-31	\$4,600,000	\$4,580,000	\$20,000
Project CN	192	Development of New Product	In Progress	2071-01-01	2071-12-31	\$4,650,000	\$4,630,000	\$20,000
Project CO	193	Development of New Product	On Hold	2072-01-01	2072-12-31	\$4,700,000	\$4,680,000	\$20,000
Project CP	194	Development of New Product	Completed	2073-01-01	2073-12-31	\$4,750,000	\$4,730,000	\$20,000
Project CQ	195	Development of New Product	In Progress	2074-01-01	2074-12-31	\$4,800,000	\$4,780,000	\$20,000
Project CR	196	Development of New Product	On Hold	2075-01-01	2075-12-31	\$4,850,000	\$4,830,000	\$20,000
Project CS	197	Development of New Product	Completed	2076-01-01	2076-12-31	\$4,900,000	\$4,880,000	\$20,000
Project CT	198	Development of New Product	In Progress	2077-01-01	2077-12-31	\$4,950,000	\$4,930,000	\$20,000
Project CU	199	Development of New Product	On Hold	2078-01-01	2078-12-31	\$5,000,000	\$4,980,000	\$20,000
Project CV	200	Development of New Product	Completed	2079-01-01	2079-12-31	\$5,050,000	\$5,030,000	\$20,000
Project CW	201	Development of New Product	In Progress	2080-01-01	2080-12-31	\$5,100,000	\$5,080,000	\$20,000
Project CX	202	Development of New Product	On Hold	2081-01-01	2081-12-31	\$5,150,000	\$5,130,000	\$20,000
Project CY	203	Development of New Product	Completed	2082-01-01	2082-12-31	\$5,200,000	\$5,180,000	\$20,000
Project CZ	204	Development of New Product	In Progress	2083-01-01	2083-12-31	\$5,250,000	\$5,230,000	\$20,000
Project DA	205	Development of New Product	On Hold	2084-01-01	2084-12-31	\$5,300,000	\$5,280,000	\$20,000
Project DB	206	Development of New Product	Completed	2085-01-01	2085-12-31	\$5,350,000	\$5,330,000	\$20,000
Project DC	207	Development of New Product	In Progress	2086-01-01	2086-12-31	\$5,400,000	\$5,380,000	\$20,000
Project DD	208	Development of New Product	On Hold	2087-01-01	2087-12-31	\$5,450,000	\$5,430,000	\$20,000
Project DE	209	Development of New Product	Completed	2088-01-01	2088-12-31	\$5,500,000	\$5,480,000	\$20,000
Project DF	210	Development of New Product	In Progress	2089-01-01	2089-12-31	\$5,550,000	\$5,530,000	\$20,000
Project DG	211	Development of New Product	On Hold	2090-01-01	2090-12-31	\$5,600,000	\$5,580,000	\$20,000
Project DH	212	Development of New Product	Completed	2091-01-01	2091-12-31	\$5,650,000	\$5,630,000	\$20,000
Project DI	213	Development of New Product	In Progress	2092-01-01	2092-12-31	\$5,700,000	\$5,680,000	\$20,000
Project DJ	214	Development of New Product	On Hold	2093-01-01	2093-12-31	\$5,750,000	\$5,730,000	\$20,000
Project DK	215	Development of New Product	Completed	2094-01-01	2094-12-31	\$5,800,000	\$5,780,000	\$20,000
Project DL	216	Development of New Product	In Progress	2095-01-01	2095-12-31			

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Lower Govt. Draw Inside Native 8/23/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	358.00	17.90	----	12				
AGSM	14.90	.75	40.31	20	23.03	1.15	1.55	110.54
POSE	9.70	.49	26.34	12	6.72	.56	.69	32.26
STCO	8.00	.40	21.51	6	10.54	1.76	1.32	50.59
KOCR	2.00	.10	5.38	1	1.94	1.94	.97	9.31
ANNUAL FORBS	2.00	----	----	11	2.75	.25	1.38	13.20
DEPI	.30	.02	1.08	3				
LEDE	.50	.03	1.61	5				
GILE	.70	.04	2.15	7				
CHAL	.30	.02	1.08	3				
POAV	.20	.01	.54	2				
TOTAL		1.86	100.00		44.98			215.90
*Not computed in percent composition								

Precipitation Data:

R. G. #16 - Lower Govt. Draw
 October 15 to April 15 = 2.25
 April 15 to July 1 = 8.35
 July 1 to September 1 = 1.30
 September 1 to October 15 = 1.76
 Season Total = 13.66
 Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Lower Govt. Draw Outside Native 8/24/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	275.00	13.75	----	14				
*CHVI	1.00	.05	----	1				
AGSM	7.10	.36	13.90	17	15.84	.93	2.23	76.03
POSE	14.00	.70	27.03	10	7.09	.71	.51	34.03
BRTE	15.40	.77	29.72	17	40.82	2.40	2.65	195.94
STCO	9.60	.48	18.53	8	11.92	1.49	1.24	57.22
FEOC	.70	.04	1.54	3	.17	.06	.24	.82
ANNUAL FORBS	2.70	----	----	16	3.46	.22	1.28	16.61
LEDE	.90	.05	1.93	9				
DEPI	.10	.01	.39	1				
CHAL	.20	.01	.39	2				
GILE	1.10	.06	2.32	11				
PLPA	.30	.02	.77	3				
PLSP	.10	.01	.39	1				
PERENNIAL FORBS	1.50	----	----	7	3.67	.52	2.45	17.62
ERPU	.60	.03	1.16	2				
SPCO	.80	.04	1.54	4				
CRE	.10	.01	.39	1				
*OPPO	.10	.01	----	1				
TOTAL		2.59	100.00		82.97			398.27
*Not computed in percent composition								

Precipitation data:

R. G. #16 - Lower Govt. Draw

October 15 to April 15 = 2.25

April 15 to July 1 = 8.35

July 1 to September 1 = 1.30

September 1 to October 15 = 1.76

Season Total = 13.66

Long Term Average = 10.56

RESEARCH AND DEVELOPMENT DATA FROM 1960 TO 1969

(GROUP 1: RESEARCH AND DEVELOPMENT COSTS)

UNIT: DOLLARS IN MILLIONS

Page 1 of 1

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Research and Development Costs	10.00	12.00	15.00	18.00	22.00	25.00	30.00	35.00	40.00	45.00
Personnel	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00
Materials	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50
Equipment	1.00	1.20	1.50	1.80	2.00	2.20	2.50	2.80	3.00	3.20
Travel	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40
Other	1.50	1.70	1.80	2.00	2.10	2.20	2.30	2.40	2.50	2.60
Total	10.00	12.00	15.00	18.00	22.00	25.00	30.00	35.00	40.00	45.00

1. This report is based on data from the Research and Development Costs Survey, 1960-1969.
 2. The data are presented in millions of dollars.
 3. The data are rounded to the nearest dollar.
 4. The data are subject to change as more information becomes available.
 5. The data are for the calendar year 1960-1969.
 6. The data are for the United States only.
 7. The data are for the private sector only.
 8. The data are for the non-federal sector only.
 9. The data are for the non-profit sector only.
 10. The data are for the for-profit sector only.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Lower Govt. Draw Inside Sprayed 8/23/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
STCO	27.00	1.35	36.90	13	95.52	7.35	3.54	458.50
AGSM	18.80	.94	25.68	19	82.15	4.32	4.37	394.32
POSE	12.10	.61	16.67	11	7.16	.65	.59	34.37
BRTE	10.70	.54	14.75	14	33.21	2.37	3.10	159.41
KOCR	2.00	.10	2.73	2	2.16	1.08	1.08	10.37
ANNUAL FORBS	1.80	----	----	15	11.63	.78	6.46	55.82
LEDE	.90	.05	1.37	9				
DEPI	.20	.01	.27	2				
CHAL	.10	.01	.27	1				
GILE	.50	.03	.82	5				
MEN	.10	.01	.27	1				
PERENNIAL FORBS	.10	----	----	1	.12	.12	1.20	.58
TRA	.10	.01	.27	1				
TOTAL		3.66	100.00		231.95			1113.37
*Not computed in percent composition								

Precipitation Data:

R. G. #16 - Lower Govt. Draw

October 15 to April 15 = 2.25

April 15 to July 1 = 8.35

July 1 to September 1 = 1.30

September 1 to October 15 = 1.76

Season Total = 13.66

Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Lower Govt. Draw Outside Sprayed 8/24/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
AGSM	12.80	.64	18.34	17	24.85	1.46	1.94	119.28
POSE	37.50	1.88	53.86	20	17.81	.89	.47	85.49
BRTE	12.60	.63	18.05	11	16.81	1.53	1.33	80.69
STCO	5.00	.25	7.16	2	2.73	1.37	.55	13.10
KOCR	.50	.03	.86	1	.16	.16	.32	.77
ANNUAL FORBS	.70	----	----	7	1.37	.20	1.96	6.58
GILE	.10	.01	.29	1				
LEDE	.30	.02	.57	3				
POAV	.10	.01	.29	1				
CHAL	.20	.01	.29	2				
PERENNIAL FORBS	.10	----	----	1	.26	.26	2.60	1.25
SPCO	.10	.01	.29	1				
TOTAL		3.49	100.00		63.99			307.16
*Not computed in percent composition								

Precipitation Data:

R. G. #16 - Lower Govt. Draw

October 15 to April 15 = 2.25

April 15 to July 1 = 8.35

July 1 to September 1 = 1.30

September 1 to October 15 = 1.76

Season Total = 13.66

Long Term Average = 10.56

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

McGraw Flat Inside Native 8/23/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	215.10	10.76	----	14				
*CHVI	7.10	.36	----	4				
AGSM	15.80	.79	21.41	20	23.06	1.15	1.46	110.69
POSE	55.10	2.76	74.80	14	25.81	1.84	.47	123.89
PERENNIAL FORBS	2.60	----	----	10	4.98	.50	1.92	23.90
SPCO	.50	.03	.81	5				
VIAM	2.00	.10	2.71	8				
ORO	.10	.01	.27	1				
*PHHO	28.00	1.40	----	12				
TOTAL		3.69	100.00		53.85			258.48
*Not computed in percent composition								

Precipitation Data:

R. G. #14 - McGraw Flat Exc.

October 15 to April 15 = 2.06

April 15 to July 1 = 7.17

July 1 to September 1 = 1.18

September 1 to October 15 = 2.01

Season Total = 12.42

Long Term Average = 9.44

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

McGraw Flat Outside Native 8/23/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	155.00	7.75	----	16				
*CHVI	16.10	.81	----	4				
*GUSA	3.00	.15	----	1				
AGSM	13.20	.66	23.08	20	15.38	.77	1.17	73.82
POSE	39.60	1.98	69.23	20	17.37	.87	.44	83.38
ANNUAL FORBS	.20	----	----	2	.64	.32	3.20	3.07
GIL	.10	.01	.35	1				
UNK	.10	.01	.35	1				
PERENNIAL FORBS	3.80	----	----	13	4.16	.32	1.09	19.97
SPCO	.60	.03	1.05	2				
VIAM	3.10	.16	5.59	11				
ARA	.10	.01	.35	1				
*PHHO	11.50	.58	----	8				
*LEPU	2.00	.10	----	2				
TOTAL		2.86	100.00		37.55			180.24
*Not computed in percent composition								

Precipitation Data:

R. G. #14 - McGraw Flat Exc.

October 15 to April 15 = 2.06

April 15 to July 1 = 7.17

July 1 to September 1 = 1.18

September 1 to October 15 = 2.01

Season Total = 12.42

Long Term Average = 9.44

REMARKS AND OBSERVATIONS MADE DURING THE SURVEY OF THE COAST OF THE STATE OF TEXAS

Chart No. 1 of the Coast Survey

Sheet No. 1 of 1

Station	Time	Latitude	Longitude	Depth	Direction	Force	Remarks
1	10.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
2	10.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
3	10.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
4	10.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
5	11.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
6	11.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
7	11.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
8	11.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
9	12.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
10	12.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
11	12.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
12	12.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
13	13.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
14	13.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
15	13.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
16	13.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
17	14.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
18	14.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
19	14.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
20	14.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
21	15.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
22	15.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
23	15.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
24	15.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
25	16.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
26	16.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
27	16.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
28	16.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
29	17.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
30	17.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
31	17.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
32	17.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
33	18.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
34	18.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
35	18.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
36	18.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
37	19.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
38	19.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
39	19.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
40	19.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
41	20.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
42	20.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
43	20.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
44	20.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
45	21.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
46	21.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
47	21.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
48	21.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
49	22.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
50	22.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
51	22.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
52	22.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
53	23.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
54	23.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
55	23.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
56	23.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
57	24.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
58	24.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
59	24.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
60	24.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
61	25.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
62	25.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
63	25.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
64	25.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
65	26.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
66	26.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
67	26.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
68	26.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
69	27.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
70	27.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
71	27.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
72	27.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
73	28.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
74	28.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
75	28.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
76	28.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
77	29.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
78	29.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
79	29.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
80	29.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
81	30.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
82	30.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
83	30.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
84	30.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
85	31.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
86	31.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
87	31.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
88	31.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
89	32.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
90	32.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
91	32.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
92	32.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
93	33.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
94	33.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
95	33.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
96	33.45	28° 15' N	97° 30' W	10	SE	1.0	Under way
97	34.00	28° 15' N	97° 30' W	10	SE	1.0	Under way
98	34.15	28° 15' N	97° 30' W	10	SE	1.0	Under way
99	34.30	28° 15' N	97° 30' W	10	SE	1.0	Under way
100	34.45	28° 15' N	97° 30' W	10	SE	1.0	Under way

1. The survey was made on the 1st day of May, 1880.
 2. The vessel used was the U. S. S. Albatross.
 3. The commanding officer was Lieut. Z. Taylor.
 4. The observer was Lieut. J. W. Foster.
 5. The assistant observer was Lieut. J. W. Foster.
 6. The boatswain was Lieut. J. W. Foster.
 7. The gunner was Lieut. J. W. Foster.
 8. The surgeon was Lieut. J. W. Foster.
 9. The steward was Lieut. J. W. Foster.
 10. The cook was Lieut. J. W. Foster.

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

North Butte Relic 7/28/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	52.00	2.60	----	2				
AGSP	56.00	2.80	71.80	20	95.38	4.77	1.70	457.82
POSE	7.10	.36	9.23	10	2.19	.22	.31	10.51
STCO	2.00	.10	2.56	1	.75	.75	.38	3.60
CAFI	9.10	.46	11.79	5	9.05	1.81	.99	43.44
ANNUAL FORBS	1.90	----	----	18	4.44	.25	2.34	21.31
DEPI	1.80	.09	2.31	18				
LARE	.10	.01	.26	1				
PERENNIAL FORBS	1.30	----	----	11	2.32	.21	1.78	11.14
LEAL	.10	.01	.26	1				
SPCO	.40	.02	.51	4				
ALTE	.40	.02	.51	4				
ERPU	.30	.02	.51	3				
AST	.10	.01	.26	1				
*OPPO	.10	.01	----	1				
*PHHO	11.70	.59	----	10				
TOTAL		3.90	100.00		114.13			547.82
*Not computed in percent composition								

Precipitation Data:

R. G. #79 - Thermopolis 2 Weather Bureau Station

October 15 to April 15 = 4.22

April 15 to July 1 = 9.52

July 1 to September 1 = .59

September 1 to October 15 = 1.91

Season Total = 16.24

Long Term Average = 11.01

RESEARCH AND DEVELOPMENT DATA FROM WOMEN'S ROCKETRY RESEARCH CENTER
 (DATA LOCATED SYSTEMATICALLY AND ALPHABETICALLY BY NAME)

These figures are approximate

Year	Month	Day	Time	Location	Personnel	Equipment	Materials	Cost	Remarks
1957	Jan	1	10:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Initial test run
1957	Jan	2	11:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Second test run
1957	Jan	3	12:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Third test run
1957	Jan	4	13:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fourth test run
1957	Jan	5	14:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifth test run
1957	Jan	6	15:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixth test run
1957	Jan	7	16:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventh test run
1957	Jan	8	17:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighth test run
1957	Jan	9	18:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Ninth test run
1957	Jan	10	19:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Tenth test run
1957	Jan	11	20:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eleventh test run
1957	Jan	12	21:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twelfth test run
1957	Jan	13	22:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirteenth test run
1957	Jan	14	23:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fourteenth test run
1957	Jan	15	24:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifteenth test run
1957	Jan	16	25:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixteenth test run
1957	Jan	17	26:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventeenth test run
1957	Jan	18	27:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighteenth test run
1957	Jan	19	28:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Nineteenth test run
1957	Jan	20	29:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twentieth test run
1957	Jan	21	30:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-first test run
1957	Jan	22	31:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-second test run
1957	Jan	23	32:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-third test run
1957	Jan	24	33:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-fourth test run
1957	Jan	25	34:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-fifth test run
1957	Jan	26	35:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-sixth test run
1957	Jan	27	36:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-seventh test run
1957	Jan	28	37:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-eighth test run
1957	Jan	29	38:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Twenty-ninth test run
1957	Jan	30	39:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirtieth test run
1957	Jan	31	40:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-first test run
1957	Jan	32	41:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-second test run
1957	Jan	33	42:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-third test run
1957	Jan	34	43:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-fourth test run
1957	Jan	35	44:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-fifth test run
1957	Jan	36	45:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-sixth test run
1957	Jan	37	46:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-seventh test run
1957	Jan	38	47:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-eighth test run
1957	Jan	39	48:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Thirty-ninth test run
1957	Jan	40	49:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fortieth test run
1957	Jan	41	50:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-first test run
1957	Jan	42	51:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-second test run
1957	Jan	43	52:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-third test run
1957	Jan	44	53:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-fourth test run
1957	Jan	45	54:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-fifth test run
1957	Jan	46	55:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-sixth test run
1957	Jan	47	56:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-seventh test run
1957	Jan	48	57:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-eighth test run
1957	Jan	49	58:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Forty-ninth test run
1957	Jan	50	59:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fiftieth test run
1957	Jan	51	60:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-first test run
1957	Jan	52	61:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-second test run
1957	Jan	53	62:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-third test run
1957	Jan	54	63:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-fourth test run
1957	Jan	55	64:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-fifth test run
1957	Jan	56	65:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-sixth test run
1957	Jan	57	66:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-seventh test run
1957	Jan	58	67:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-eighth test run
1957	Jan	59	68:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Fifty-ninth test run
1957	Jan	60	69:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixtieth test run
1957	Jan	61	70:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-first test run
1957	Jan	62	71:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-second test run
1957	Jan	63	72:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-third test run
1957	Jan	64	73:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-fourth test run
1957	Jan	65	74:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-fifth test run
1957	Jan	66	75:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-sixth test run
1957	Jan	67	76:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-seventh test run
1957	Jan	68	77:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-eighth test run
1957	Jan	69	78:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Sixty-ninth test run
1957	Jan	70	79:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventieth test run
1957	Jan	71	80:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-first test run
1957	Jan	72	81:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-second test run
1957	Jan	73	82:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-third test run
1957	Jan	74	83:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-fourth test run
1957	Jan	75	84:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-fifth test run
1957	Jan	76	85:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-sixth test run
1957	Jan	77	86:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-seventh test run
1957	Jan	78	87:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-eighth test run
1957	Jan	79	88:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Seventy-ninth test run
1957	Jan	80	89:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eightieth test run
1957	Jan	81	90:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-first test run
1957	Jan	82	91:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-second test run
1957	Jan	83	92:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-third test run
1957	Jan	84	93:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-fourth test run
1957	Jan	85	94:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-fifth test run
1957	Jan	86	95:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-sixth test run
1957	Jan	87	96:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-seventh test run
1957	Jan	88	97:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-eighth test run
1957	Jan	89	98:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Eighty-ninth test run
1957	Jan	90	99:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Ninetieth test run
1957	Jan	91	100:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	Hundredth test run
1957	Jan	92	101:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and first test run
1957	Jan	93	102:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and second test run
1957	Jan	94	103:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and third test run
1957	Jan	95	104:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and fourth test run
1957	Jan	96	105:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and fifth test run
1957	Jan	97	106:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and sixth test run
1957	Jan	98	107:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and seventh test run
1957	Jan	99	108:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and eighth test run
1957	Jan	100	109:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and ninth test run
1957	Jan	101	110:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and tenth test run
1957	Jan	102	111:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and eleventh test run
1957	Jan	103	112:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twelfth test run
1957	Jan	104	113:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirteenth test run
1957	Jan	105	114:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and fourteenth test run
1957	Jan	106	115:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and fifteenth test run
1957	Jan	107	116:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and sixteenth test run
1957	Jan	108	117:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and seventeenth test run
1957	Jan	109	118:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and eighteenth test run
1957	Jan	110	119:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and nineteenth test run
1957	Jan	111	120:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twentieth test run
1957	Jan	112	121:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-first test run
1957	Jan	113	122:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-second test run
1957	Jan	114	123:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-third test run
1957	Jan	115	124:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-fourth test run
1957	Jan	116	125:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-fifth test run
1957	Jan	117	126:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-sixth test run
1957	Jan	118	127:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-seventh test run
1957	Jan	119	128:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-eighth test run
1957	Jan	120	129:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and twenty-ninth test run
1957	Jan	121	130:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirtieth test run
1957	Jan	122	131:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-first test run
1957	Jan	123	132:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-second test run
1957	Jan	124	133:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-third test run
1957	Jan	125	134:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-fourth test run
1957	Jan	126	135:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-fifth test run
1957	Jan	127	136:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-sixth test run
1957	Jan	128	137:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-seventh test run
1957	Jan	129	138:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-eighth test run
1957	Jan	130	139:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and thirty-ninth test run
1957	Jan	131	140:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and fortieth test run
1957	Jan	132	141:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and forty-first test run
1957	Jan	133	142:00	Room 101	John Doe	Test Rig	Aluminum	\$100.00	One hundred and forty-second test run
1957	Jan	134	143:00	Room 101	John Doe				

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Round Top Relic 7/28/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	48.00	2.40	----	3				
*GUSA	.10	.01	----	1				
AGSP	74.70	3.74	57.55	17	121.23	7.13	1.62	581.90
POSE	5.30	.27	4.15	10	6.62	.66	1.25	31.78
STCO	5.10	.26	4.00	4	4.38	1.10	.86	21.02
SIHY	1.00	.05	.77	1	.36	.36	.36	1.73
CAFI	38.20	1.91	29.39	15	15.51	1.03	.41	74.45
ANNUAL FORBS	2.70	----	----	17	7.46	.44	2.76	35.81
DEPI	1.60	.08	1.23	16				
LARE	1.00	.05	.77	10				
EUSE	.10	.01	.15	1				
PERENNIAL FORBS	2.30	----	----	12	3.72	.31	1.62	17.86
ALTE	1.40	.07	1.08	10				
GACO	.10	.01	.15	1				
CRBR	.10	.01	.15	1				
ZYG	.60	.03	.46	2				
CRE	.10	.01	.15	1				
TOTAL		6.50	100.00		159.28			764.55
*Not computed in percent composition								

Precipitation Data:

R. G. #79 - Thermopolis 2 Weather Bureau Station
 October 15 to April 15 = 4.22
 April 15 to July 1 = 9.52
 July 1 to September 1 = .59
 September 1 to October 15 = 1.91
 Season Total = 16.24
 Long Term Average = 11.01

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Sand Gulch Inside Native 7/15/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	1355.90	6.78	76.95	113	608.66	5.39	.45	292.16
AGSM	79.10	.40	4.54	113	280.73	2.48	3.55	134.75
BRTE	219.80	1.10	12.49	193	921.62	4.78	4.19	442.38
MUSQ	2.00	.01	.11	11	.18	.02	.09	.09
POSE	35.30	.18	2.04	30	14.19	.47	.40	6.81
BRCO	.60	T	----	2	1.66	.83	2.77	.80
SIHY	26.30	.13	1.48	12	41.21	3.43	1.57	19.78
BOGR	32.00	.16	1.82	3	8.84	2.95	.28	4.24
ANNUAL FORBS	9.50	----	----	67	32.02	.48	3.37	15.37
ATAR	4.20	.02	.23	34				
LEDE	3.30	.02	.23	29				
SAKA	.20	T	----	2				
GIPU	.10	T	----	1				
LARE	1.00	.01	.11	10				
DEPI	.40	T	----	4				
CHAL	.10	T	----	1				
PLSP	.20	T	----	2				
PERENNIAL FORBS	----	----	----					
*OPPO	227.20	1.14	----	16				
TOTAL		8.81	100.00		1909.11			916.38
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #75 - Sand Gulch Exc.

October 15 to April 15 = 1.95

April 15 to July 1 = 7.00

July 1 to September 1 = .52

September 1 to October 15 = 1.59

Season Total = 11.06

Long Term Average = 9.27

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Sand Gulch Outside Native 7/12/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x .48
	A	B	C	E	F	G	H	I
ATNU	1488.90	7.44	72.80	100	885.34	8.85	.59	424.96
AGSM	59.50	.30	2.94	66	169.40	2.57	2.85	81.31
POSE	22.00	.11	1.08	27	7.55	.28	.34	3.62
BRTE	89.70	.45	4.40	126	493.48	3.92	5.50	236.87
MUSQ	23.40	.12	1.17	56	17.31	.31	.74	8.31
BOGR	312.10	1.56	15.26	55	80.05	1.46	.26	38.42
BRCO	.50	T	----	1	2.96	2.96	5.92	1.42
SIHY	7.60	.04	.39	7	38.91	5.56	5.12	18.68
ANNUAL FORBS	32.50	----	----	123	309.94	2.52	9.54	148.77
ATAR	24.70	.12	1.17	94				
CHAL	2.30	.01	.10	19				
SAKA	1.10	.01	.10	11				
LARE	3.00	.02	.20	30				
LEDE	.40	T	----	4				
GIPU	.50	T	----	5				
MATA	.10	T	----	1				
EUSE	.40	T	----	4				
PERENNIAL FORBS	7.80	----	----	17	6.21	.37	.80	2.98
VIVA	.10	T	----	1				
*OPPO	410.10	2.05	----	35				
AST	7.70	.04	.39	16				
TOTAL		10.22	100.00		2011.15			965.34
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #75 - Sand Gulch Exc.

October 15 to April 15 = 1.95

April 15 to July 1 = 7.00

July 1 to September 1 = .52

September 1 to October 15 = 1.59

Season Total = 11.06

Long Term Average = 9.27

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Smilo Inside Native 7/24/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	266.00	13.30	----	9				
BRTE	.20	.01	.90	2	.42	.21	2.10	2.02
AGSM	3.20	.16	14.41	15	8.37	.56	2.62	40.18
SIHY	.10	.01	.90	1	.19	.19	1.90	.91
POSE	8.90	.45	40.55	11	4.08	.37	.46	19.58
FEOC	.80	.04	3.60	8	.47	.06	.59	2.26
STCO	3.00	.15	13.51	1	3.51	3.51	1.17	16.85
ANNUAL FORBS	5.20	----	----	15	12.64	.84	2.43	60.67
SAKA	.30	.02	1.80	3				
PLSP	4.50	.23	20.73	14				
DEPI	.30	.02	1.80	3				
UNK	.10	.01	.90	1				
PERENNIAL FORBS	.20	----	----	2	.74	.37	3.70	3.55
CANU	.20	.01	.90	2				
TOTAL		1.11	100.00		30.42			146.02
*Not computed in percent composition								

Precipitation Data:

R. G. #36 - Smilo Exc.
 October 15 to April 15 = 2.44
 April 15 to July 1 = 6.61
 July 1 to September 1 = .90
 September 1 to October 15 = 1.83
 Season Total = 11.78
 Long Term Average = 8.48

MEASUREMENT AND RECORDING DATA FOR THE STUDY OF THE EFFECTS OF THE

PLATE 1

Station	Time	Temperature	Humidity	Wind Speed	Wind Direction	Cloudiness	Visibility	Barometric Pressure	Relative Humidity	Wet Bulb Globe Temperature	Heat Index	Dew Point	Apparent Temperature
1	0800	75.0	65.0	10.0	SE	4	10.0	30.0	65.0	75.0	75.0	65.0	75.0
2	0900	78.0	68.0	12.0	SE	5	10.0	30.0	68.0	78.0	78.0	68.0	78.0
3	1000	80.0	70.0	15.0	SE	6	10.0	30.0	70.0	80.0	80.0	70.0	80.0
4	1100	82.0	72.0	18.0	SE	7	10.0	30.0	72.0	82.0	82.0	72.0	82.0
5	1200	85.0	75.0	20.0	SE	8	10.0	30.0	75.0	85.0	85.0	75.0	85.0
6	1300	88.0	78.0	22.0	SE	9	10.0	30.0	78.0	88.0	88.0	78.0	88.0
7	1400	90.0	80.0	25.0	SE	10	10.0	30.0	80.0	90.0	90.0	80.0	90.0
8	1500	92.0	82.0	28.0	SE	11	10.0	30.0	82.0	92.0	92.0	82.0	92.0
9	1600	95.0	85.0	30.0	SE	12	10.0	30.0	85.0	95.0	95.0	85.0	95.0
10	1700	98.0	88.0	32.0	SE	13	10.0	30.0	88.0	98.0	98.0	88.0	98.0
11	1800	100.0	90.0	35.0	SE	14	10.0	30.0	90.0	100.0	100.0	90.0	100.0
12	1900	102.0	92.0	38.0	SE	15	10.0	30.0	92.0	102.0	102.0	92.0	102.0
13	2000	105.0	95.0	40.0	SE	16	10.0	30.0	95.0	105.0	105.0	95.0	105.0
14	2100	108.0	98.0	42.0	SE	17	10.0	30.0	98.0	108.0	108.0	98.0	108.0
15	2200	110.0	100.0	45.0	SE	18	10.0	30.0	100.0	110.0	110.0	100.0	110.0
16	2300	112.0	102.0	48.0	SE	19	10.0	30.0	102.0	112.0	112.0	102.0	112.0
17	2400	115.0	105.0	50.0	SE	20	10.0	30.0	105.0	115.0	115.0	105.0	115.0
18	2500	118.0	108.0	52.0	SE	21	10.0	30.0	108.0	118.0	118.0	108.0	118.0
19	2600	120.0	110.0	55.0	SE	22	10.0	30.0	110.0	120.0	120.0	110.0	120.0
20	2700	122.0	112.0	58.0	SE	23	10.0	30.0	112.0	122.0	122.0	112.0	122.0
21	2800	125.0	115.0	60.0	SE	24	10.0	30.0	115.0	125.0	125.0	115.0	125.0
22	2900	128.0	118.0	62.0	SE	25	10.0	30.0	118.0	128.0	128.0	118.0	128.0
23	3000	130.0	120.0	65.0	SE	26	10.0	30.0	120.0	130.0	130.0	120.0	130.0
24	3100	132.0	122.0	68.0	SE	27	10.0	30.0	122.0	132.0	132.0	122.0	132.0
25	3200	135.0	125.0	70.0	SE	28	10.0	30.0	125.0	135.0	135.0	125.0	135.0
26	3300	138.0	128.0	72.0	SE	29	10.0	30.0	128.0	138.0	138.0	128.0	138.0
27	3400	140.0	130.0	75.0	SE	30	10.0	30.0	130.0	140.0	140.0	130.0	140.0
28	3500	142.0	132.0	78.0	SE	31	10.0	30.0	132.0	142.0	142.0	132.0	142.0
29	3600	145.0	135.0	80.0	SE	32	10.0	30.0	135.0	145.0	145.0	135.0	145.0
30	3700	148.0	138.0	82.0	SE	33	10.0	30.0	138.0	148.0	148.0	138.0	148.0
31	3800	150.0	140.0	85.0	SE	34	10.0	30.0	140.0	150.0	150.0	140.0	150.0
32	3900	152.0	142.0	88.0	SE	35	10.0	30.0	142.0	152.0	152.0	142.0	152.0
33	4000	155.0	145.0	90.0	SE	36	10.0	30.0	145.0	155.0	155.0	145.0	155.0
34	4100	158.0	148.0	92.0	SE	37	10.0	30.0	148.0	158.0	158.0	148.0	158.0
35	4200	160.0	150.0	95.0	SE	38	10.0	30.0	150.0	160.0	160.0	150.0	160.0
36	4300	162.0	152.0	98.0	SE	39	10.0	30.0	152.0	162.0	162.0	152.0	162.0
37	4400	165.0	155.0	100.0	SE	40	10.0	30.0	155.0	165.0	165.0	155.0	165.0
38	4500	168.0	158.0	102.0	SE	41	10.0	30.0	158.0	168.0	168.0	158.0	168.0
39	4600	170.0	160.0	105.0	SE	42	10.0	30.0	160.0	170.0	170.0	160.0	170.0
40	4700	172.0	162.0	108.0	SE	43	10.0	30.0	162.0	172.0	172.0	162.0	172.0
41	4800	175.0	165.0	110.0	SE	44	10.0	30.0	165.0	175.0	175.0	165.0	175.0
42	4900	178.0	168.0	112.0	SE	45	10.0	30.0	168.0	178.0	178.0	168.0	178.0
43	5000	180.0	170.0	115.0	SE	46	10.0	30.0	170.0	180.0	180.0	170.0	180.0
44	5100	182.0	172.0	118.0	SE	47	10.0	30.0	172.0	182.0	182.0	172.0	182.0
45	5200	185.0	175.0	120.0	SE	48	10.0	30.0	175.0	185.0	185.0	175.0	185.0
46	5300	188.0	178.0	122.0	SE	49	10.0	30.0	178.0	188.0	188.0	178.0	188.0
47	5400	190.0	180.0	125.0	SE	50	10.0	30.0	180.0	190.0	190.0	180.0	190.0
48	5500	192.0	182.0	128.0	SE	51	10.0	30.0	182.0	192.0	192.0	182.0	192.0
49	5600	195.0	185.0	130.0	SE	52	10.0	30.0	185.0	195.0	195.0	185.0	195.0
50	5700	198.0	188.0	132.0	SE	53	10.0	30.0	188.0	198.0	198.0	188.0	198.0
51	5800	200.0	190.0	135.0	SE	54	10.0	30.0	190.0	200.0	200.0	190.0	200.0
52	5900	202.0	192.0	138.0	SE	55	10.0	30.0	192.0	202.0	202.0	192.0	202.0
53	6000	205.0	195.0	140.0	SE	56	10.0	30.0	195.0	205.0	205.0	195.0	205.0
54	6100	208.0	198.0	142.0	SE	57	10.0	30.0	198.0	208.0	208.0	198.0	208.0
55	6200	210.0	200.0	145.0	SE	58	10.0	30.0	200.0	210.0	210.0	200.0	210.0
56	6300	212.0	202.0	148.0	SE	59	10.0	30.0	202.0	212.0	212.0	202.0	212.0
57	6400	215.0	205.0	150.0	SE	60	10.0	30.0	205.0	215.0	215.0	205.0	215.0
58	6500	218.0	208.0	152.0	SE	61	10.0	30.0	208.0	218.0	218.0	208.0	218.0
59	6600	220.0	210.0	155.0	SE	62	10.0	30.0	210.0	220.0	220.0	210.0	220.0
60	6700	222.0	212.0	158.0	SE	63	10.0	30.0	212.0	222.0	222.0	212.0	222.0
61	6800	225.0	215.0	160.0	SE	64	10.0	30.0	215.0	225.0	225.0	215.0	225.0
62	6900	228.0	218.0	162.0	SE	65	10.0	30.0	218.0	228.0	228.0	218.0	228.0
63	7000	230.0	220.0	165.0	SE	66	10.0	30.0	220.0	230.0	230.0	220.0	230.0
64	7100	232.0	222.0	168.0	SE	67	10.0	30.0	222.0	232.0	232.0	222.0	232.0
65	7200	235.0	225.0	170.0	SE	68	10.0	30.0	225.0	235.0	235.0	225.0	235.0
66	7300	238.0	228.0	172.0	SE	69	10.0	30.0	228.0	238.0	238.0	228.0	238.0
67	7400	240.0	230.0	175.0	SE	70	10.0	30.0	230.0	240.0	240.0	230.0	240.0
68	7500	242.0	232.0	178.0	SE	71	10.0	30.0	232.0	242.0	242.0	232.0	242.0
69	7600	245.0	235.0	180.0	SE	72	10.0	30.0	235.0	245.0	245.0	235.0	245.0
70	7700	248.0	238.0	182.0	SE	73	10.0	30.0	238.0	248.0	248.0	238.0	248.0
71	7800	250.0	240.0	185.0	SE	74	10.0	30.0	240.0	250.0	250.0	240.0	250.0
72	7900	252.0	242.0	188.0	SE	75	10.0	30.0	242.0	252.0	252.0	242.0	252.0
73	8000	255.0	245.0	190.0	SE	76	10.0	30.0	245.0	255.0	255.0	245.0	255.0
74	8100	258.0	248.0	192.0	SE	77	10.0	30.0	248.0	258.0	258.0	248.0	258.0
75	8200	260.0	250.0	195.0	SE	78	10.0	30.0	250.0	260.0	260.0	250.0	260.0
76	8300	262.0	252.0	198.0	SE	79	10.0	30.0	252.0	262.0	262.0	252.0	262.0
77	8400	265.0	255.0	200.0	SE	80	10.0	30.0	255.0	265.0	265.0	255.0	265.0
78	8500	268.0	258.0	202.0	SE	81	10.0	30.0	258.0	268.0	268.0	258.0	268.0
79	8600	270.0	260.0	205.0	SE	82	10.0	30.0	260.0	270.0	270.0	260.0	270.0
80	8700	272.0	262.0	208.0	SE	83	10.0	30.0	262.0	272.0	272.0	262.0	272.0
81	8800	275.0	265.0	210.0	SE	84	10.0	30.0	265.0	275.0	275.0	265.0	275.0
82	8900	278.0	268.0	212.0	SE	85	10.0	30.0	268.0	278.0	278.0	268.0	278.0
83	9000	280.0	270.0	215.0	SE	86	10.0	30.0	270.0	280.0	280.0	270.0	280.0
84	9100	282.0	272.0	218.0	SE	87	10.0	30.0	272.0	282.0	282.0	272.0	282.0
85	9200	285.0	275.0	220.0	SE	88	10.0	30.0	275.0	285.0	285.0	275.0	285.0
86	9300	288.0	278.0	222.0	SE	89	10.0	30.0	278.0	288.0	288.0	278.0	288.0
87	9400	290.0	280.0	225.0	SE	90	10.0	30.0	280.0	290.0	290.0	280.0	290.0
88	9500	292.0	282.0	228.0	SE	91	10.0	30.0	282.0	292.0	292.0	282.0	292.0
89	9600	295.0	285.0	230.0	SE	92	10.0	30.0	285.0	295.0	295.0	285.0	295.0
90	9700	298.0	288.0	232.0	SE	93	10.0	30.0	288.0	298.0	298.0	288.0	298.0
91	9800	300.0	290.0	235.0	SE	94	10.0	30.0	290.0	300.0	300.0	290.0	300.0
92	9900	302.0	292.0	238.0	SE	95	10.0	30.0	292.0	302.0	302.0	292.0	302.0
93	10000	305.0	295.0										

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Smilo Outside Native 7/24/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	286.00	14.30	----	13				
BOGR	5.50	.28	15.91	3	1.40	.47	.25	6.72
SIHY	4.70	.24	13.64	11	4.73	.43	1.01	22.70
POSE	17.80	.89	50.56	15	7.06	.47	.40	33.89
AGSM	1.70	.09	5.11	4	2.05	.51	1.21	9.84
FEOC	.50	.03	1.70	5	.30	.06	.60	1.44
STCO	.60	.03	1.70	2	.58	.29	.97	2.78
ANNUAL FORBS	3.60	----	----	15	12.01	.80	3.34	57.65
PLSP	2.50	.13	7.39	13				
LEDE	.40	.02	1.14	4				
LARE	.10	.01	.57	1				
SAKA	.10	.01	.57	1				
DEPI	.20	.01	.57	1				
CHAL	.20	.01	.57	2				
UNK	.10	.01	.57	2				
PERENNIAL FORBS	----	----	----					
*OPPO	20.00	1.00	----	3				
TOTAL		1.76	100.00		28.13			135.02
*Not computed in percent composition								

Precipitation Data:

R. G. #36 - Smilo Exc.
 October 15 to April 15 = 2.44
 April 15 to July 1 = 6.61
 July 1 to September 1 = .90
 September 1 to October 15 = 1.83
 Season Total = 11.78
 Long Term Average = 8.48

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Smilo Inside Sprayed 7/24/67	Total Trans.. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	1.00	.05	----	1				
POSE	8.10	.41	22.04	7	2.65	.38	.33	12.72
FEOC	5.20	.26	13.98	15	6.52	.43	1.25	31.30
BRTE	10.90	.55	29.56	19	68.85	3.62	6.32	330.48
AGSM	6.60	.33	17.74	15	15.42	1.03	2.34	74.02
SIHY	1.50	.08	4.30	2	2.42	1.21	1.61	11.62
AGSP	1.00	.05	2.69	1	1.06	1.06	1.06	5.09
ANNUAL FORBS	3.20	----	----	17	6.35	.37	1.98	30.48
DEPI	.30	.02	1.08	3				
PLSP	2.30	.12	6.45	15				
SAKA	.40	.02	1.08	4				
CHAL	.10	.01	.54	1				
LEDE	.10	.01	.54	1				
PERENNIAL FORBS	----	----	----					
*OPPO	24.00	1.20	----	2				
TOTAL		1.86	100.00		103.27			495.71
*Not computed in percent composition								

Precipitation Data:

R. G. #36 - Smilo Exc.

October 15 to April 15 = 2.44

April 15 to July 1 = 6.61

July 1 to September 1 = .90

September 1 to October 15 = 1.83

Season Total = 11.78

Long Term Average = 8.48

REMARKS AND OBSERVATIONS DATA WITH VARIOUS ALPHABETIC SYMBOLS
(PRINTED RECORDS SYSTEMATICALLY AND CORRECTLY ON ONLY ONE PAGE)

Overhead Projector

Plate Size 7 x 1

Serial	Location	Height	Distance	Angle	Time	Remarks	Notes
1	1000	100	100	100	100		
2	1000	100	100	100	100		
3	1000	100	100	100	100		
4	1000	100	100	100	100		
5	1000	100	100	100	100		
6	1000	100	100	100	100		
7	1000	100	100	100	100		
8	1000	100	100	100	100		
9	1000	100	100	100	100		
10	1000	100	100	100	100		
11	1000	100	100	100	100		
12	1000	100	100	100	100		
13	1000	100	100	100	100		
14	1000	100	100	100	100		
15	1000	100	100	100	100		
16	1000	100	100	100	100		
17	1000	100	100	100	100		
18	1000	100	100	100	100		
19	1000	100	100	100	100		
20	1000	100	100	100	100		
21	1000	100	100	100	100		
22	1000	100	100	100	100		
23	1000	100	100	100	100		
24	1000	100	100	100	100		
25	1000	100	100	100	100		
26	1000	100	100	100	100		
27	1000	100	100	100	100		
28	1000	100	100	100	100		
29	1000	100	100	100	100		
30	1000	100	100	100	100		
31	1000	100	100	100	100		
32	1000	100	100	100	100		
33	1000	100	100	100	100		
34	1000	100	100	100	100		
35	1000	100	100	100	100		
36	1000	100	100	100	100		
37	1000	100	100	100	100		
38	1000	100	100	100	100		
39	1000	100	100	100	100		
40	1000	100	100	100	100		
41	1000	100	100	100	100		
42	1000	100	100	100	100		
43	1000	100	100	100	100		
44	1000	100	100	100	100		
45	1000	100	100	100	100		
46	1000	100	100	100	100		
47	1000	100	100	100	100		
48	1000	100	100	100	100		
49	1000	100	100	100	100		
50	1000	100	100	100	100		
51	1000	100	100	100	100		
52	1000	100	100	100	100		
53	1000	100	100	100	100		
54	1000	100	100	100	100		
55	1000	100	100	100	100		
56	1000	100	100	100	100		
57	1000	100	100	100	100		
58	1000	100	100	100	100		
59	1000	100	100	100	100		
60	1000	100	100	100	100		
61	1000	100	100	100	100		
62	1000	100	100	100	100		
63	1000	100	100	100	100		
64	1000	100	100	100	100		
65	1000	100	100	100	100		
66	1000	100	100	100	100		
67	1000	100	100	100	100		
68	1000	100	100	100	100		
69	1000	100	100	100	100		
70	1000	100	100	100	100		
71	1000	100	100	100	100		
72	1000	100	100	100	100		
73	1000	100	100	100	100		
74	1000	100	100	100	100		
75	1000	100	100	100	100		
76	1000	100	100	100	100		
77	1000	100	100	100	100		
78	1000	100	100	100	100		
79	1000	100	100	100	100		
80	1000	100	100	100	100		
81	1000	100	100	100	100		
82	1000	100	100	100	100		
83	1000	100	100	100	100		
84	1000	100	100	100	100		
85	1000	100	100	100	100		
86	1000	100	100	100	100		
87	1000	100	100	100	100		
88	1000	100	100	100	100		
89	1000	100	100	100	100		
90	1000	100	100	100	100		
91	1000	100	100	100	100		
92	1000	100	100	100	100		
93	1000	100	100	100	100		
94	1000	100	100	100	100		
95	1000	100	100	100	100		
96	1000	100	100	100	100		
97	1000	100	100	100	100		
98	1000	100	100	100	100		
99	1000	100	100	100	100		
100	1000	100	100	100	100		

REMARKS AND OBSERVATIONS DATA WITH VARIOUS ALPHABETIC SYMBOLS
(PRINTED RECORDS SYSTEMATICALLY AND CORRECTLY ON ONLY ONE PAGE)

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Smilo Outside Sprayed 7/27/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times 4.8$
	A	B	C	E	F	G	H	I
*ARTR	30.00	1.50	----	1				
BRTE	18.80	.94	36.72	20	112.18	5.61	5.97	538.46
POSE	21.70	1.09	42.58	14	6.13	.44	.28	29.42
AGSM	2.70	.14	5.47	10	12.65	1.27	4.69	60.72
BOGR	.50	.03	1.17	1	.17	.17	.34	.82
FEOC	.70	.04	1.56	7	2.16	.31	3.09	10.37
SIHY	1.50	.08	3.13	2	1.65	.83	1.10	7.92
ANNUAL FORBS	4.20	----	----	10	23.54	2.35	5.60	112.99
SAKA	.60	.03	1.17	2				
PLSP	3.10	.16	6.25	8				
DEPI	.10	.01	.39	1				
LARE	.10	.01	.39	1				
CHAL	.10	.01	.39	1				
LYG	.10	.01	.39	1				
UNK	.10	.01	.39	1				
PERENNIAL FORBS	----	----	----					
*OPPO	.10	.01	----	1				
TOTAL		2.56	100.00		158.48			760.70
*Not computed in percent composition								

Precipitation Data:

R. G. #36 - Smilo Exc.
 October 15 to April 15 = 2.44
 April 15 to July 1 = 6.61
 July 1 to September 1 = .90
 September 1 to October 15 = 1.83
 Season Total = 11.78
 Long Term Average = 8.48

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Sweetwater Inside Native 7/31/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	115.00	5.75	----	5				
*CHVI	2.00	.10	----	1				
*ARNO	16.00	.80	----	2				
*GUSA	121.00	6.05	----	5				
STCO	45.10	2.26	35.19	16	27.08	1.69	.60	129.98
KOCR	20.20	1.01	15.72	13	11.91	.92	.59	57.17
POSE	12.70	.64	9.97	13	3.97	.31	.31	19.06
CAFI	17.50	.88	13.71	12	8.17	.68	.47	39.22
AGSM	1.00	.05	.78	6	.86	.14	.86	4.13
ANNUAL FORBS	1.60	----	----	6	.76	.13	.48	3.65
CHAL	.30	.02	.31	3				
CAMI	.10	.01	.16	1				
CRBR	1.00	.05	.78	1				
OEN	.20	.01	.16	2				
PERENNIAL FORBS	29.60	----	----	10	22.27	2.23	.75	106.90
ALTE	.10	.01	.16	1				
ARA	.20	.01	.16	2				
AST	14.10	.71	11.06	5				
VIO	.20	.01	.16	2				
ERI	15.00	.75	11.68	3				
*PHHO	34.50	1.73	----	9				
*LEPU	19.00	.95	----	3				
TOTAL		6.42	100.00		75.02			360.11
*Not computed in percent composition								

Precipitation Data:

R. G. #11 - Sweetwater Exc.

October 15 to April 15 = 2.26

April 15 to July 1 = ----

July 1 to September 1 = .33

September 1 to October 15 = 1.48

Season Total = ----

Long Term Average = 6.32

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Sweetwater Outside Native 7/31/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight. Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	162.00	8.10	----	6				
*CHVI	5.00	.25	----	1				
*GUSA	35.00	1.75	----	3				
AGSM	6.10	.31	6.33	16	7.10	.44	1.16	34.08
STCO	17.10	.86	17.55	15	14.26	.95	.83	68.45
KOCR	16.50	.83	16.94	11	7.32	.67	.44	35.14
POSE	15.00	.75	15.31	12	2.55	.21	.17	12.24
CAFI	28.80	1.44	29.38	18	11.23	.62	.39	53.90
ORHY	.50	.03	.61	1	.21	.21	.42	1.01
ANNUAL								
FORBS	.40	----	----	4	.06	.02	.15	.29
CHAL	.40	.02	.41	4				
PERENNIAL								
FORBS	13.10	----	----	4	2.11	.53	1.61	10.13
AST	2.00	.10	2.04	1				
ERI	11.10	.56	11.43	3				
*PHHO	8.00	.40	----	3				
TOTAL		4.90	100.00		44.84			215.24
*Not computed in percent composition								

Precipitation Data:

R. G. #11 - Sweetwater Exc.

October 15 to April 15 = 2.26

April 15 to July 1 = ----

July 1 to September 1 = .33

September 1 to October 15 = 1.48

Season Total = ----

Long Term Average = 6.32

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

No. Plots 200

Plots Size 1 x 10

Cover Determined by Area Estimate

Two-Mile Hill Inside Native 7/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Composition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occurrences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	1584.80	7.92	77.13	152	696.20	4.58	.44	334.18
BRTE	126.90	.63	6.13	129	651.87	5.05	5.14	312.90
BRCO	46.40	.23	2.24	135	384.27	2.85	8.28	184.45
POSE	84.80	.42	4.09	78	26.08	.33	.31	12.52
AGCR	3.00	.02	.19	1	11.22	11.22	3.74	5.39
SIHY	169.60	.85	8.29	84	467.95	5.57	2.76	224.62
ORHY	18.00	.09	.88	2	38.30	19.15	2.13	18.38
BRJA	.10	T	----	1	.32	.32	3.20	.15
ANNUAL FORBS	19.60	----	----	122	106.05	.87	5.41	50.90
HEAN	5.20	.03	.29	44				
LARE	4.40	.02	.19	40				
LEDE	3.10	.02	.19	31				
CHAL	.30	T	----	3				
OECA	3.60	.02	.19	28				
CAMI	3.00	.02	.19	22				
ERI	.30	T	----	3				
DEPI	.20	T	----	2				
PERENNIAL FORBS	.30	----	----	3	.38	.13	1.27	.18
ALTE	.20	T	----	2				
AST	.10	T	----	1				
TOTAL		10.27	100.00		2382.64			1143.67
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #39 - Two-Mile Hill Exc.

October 15 to April 15 = 3.67
 April 15 to July 1 = 4.48
 July 1 to September 1 = .49
 September 1 to October 15 = 1.88
 Season Total = 10.52
 Long Term Average = 10.38

Mr. J. H. Smith

1900-1901

1900-1901

NAME	AGE	RESIDENCE	EDUCATION	RELIGION	POLITICAL	PROFESSION	INDUSTRY	DATE
Mr. J. H. Smith	45	New York	Harvard	Episcopal	Republican	Lawyer	Banker	1900-1901
Mr. W. B. Jones	52	Chicago	Yale	Methodist	Democrat	Physician	Physician	1900-1901
Mr. C. D. Brown	38	Boston	MIT	Unitarian	Republican	Engineer	Engineer	1900-1901
Mr. E. F. Green	41	Philadelphia	University of Pennsylvania	Quaker	Republican	Merchant	Merchant	1900-1901
Mr. G. H. White	55	San Francisco	Stanford	Presbyterian	Republican	Businessman	Businessman	1900-1901
Mr. I. J. Black	48	London	Trinity College	Anglican	Conservative	Banker	Banker	1900-1901
Mr. K. L. Grey	35	Paris	École Polytechnique	Catholic	Republican	Engineer	Engineer	1900-1901
Mr. M. N. Hall	50	Berlin	University of Berlin	Protestant	Conservative	Physician	Physician	1900-1901
Mr. O. P. King	42	Vienna	University of Vienna	Catholic	Conservative	Lawyer	Lawyer	1900-1901
Mr. Q. R. Lee	30	Amsterdam	University of Amsterdam	Reformed	Liberal	Merchant	Merchant	1900-1901
Mr. S. T. Miller	40	Brussels	University of Brussels	Catholic	Conservative	Engineer	Engineer	1900-1901
Mr. U. V. Wilson	35	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. W. X. Young	45	Zurich	University of Zurich	Protestant	Conservative	Banker	Banker	1900-1901
Mr. Y. Z. Adams	50	Basel	University of Basel	Catholic	Conservative	Lawyer	Lawyer	1900-1901
Mr. A. B. Baker	38	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. C. D. Carter	42	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. E. F. Evans	48	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. G. H. Fisher	52	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. I. J. Gibson	35	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. K. L. Grant	40	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. M. N. Harris	45	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. O. P. Heath	50	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. Q. R. Hill	38	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. S. T. Howell	42	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. U. V. Ingram	48	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. W. X. Jackson	52	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. Y. Z. Johnson	35	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. A. B. Keller	40	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. C. D. Lewis	45	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. E. F. Martin	50	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. G. H. Nelson	38	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. I. J. Oliver	42	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. K. L. Parker	48	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. M. N. Quinn	52	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. O. P. Roberts	35	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. Q. R. Scott	40	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
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Mr. S. T. Turner	45	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. U. V. Walker	50	Geneva	University of Geneva	Protestant	Liberal	Lawyer	Lawyer	1900-1901
Mr. W. X. Young	38	Geneva	University of Geneva	Protestant	Liberal	Engineer	Engineer	1900-1901
Mr. Y. Z. Adams	42	Geneva	University of Geneva	Protestant	Liberal	Physician	Physician	1900-1901
Mr. A. B. Baker	48	Geneva	University of Geneva	Protestant	Liberal	Banker	Banker	1900-1901
Mr. C. D. Carter	52	Geneva						

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

Two-Mile Hill Outside Native 7/14/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences $F \div E$	Wgt./ Unit Basal Area $F \div E$	Pounds Per Acre $F \times .48$
	A	B	C	E	F	G	H	I
ATNU	2658.80	13.29	96.73	123	1053.50	8.57	.40	505.68
POSE	51.50	.26	1.89	28	13.50	.48	.26	6.48
BRTE	2.70	.01	.07	15	20.37	1.36	7.54	9.78
ORHY	1.20	.01	.07	3	2.98	.99	2.48	1.43
SIHY	2.20	.01	.07	18	2.99	.17	1.36	1.44
BRCO	2.20	.01	.07	9	10.78	1.20	4.90	5.17
ANNUAL FORBS	25.90	----	----	163	231.50	1.42	8.94	111.12
HEAN	6.60	.03	.22	58				
LARE	14.00	.07	.51	128				
OECA	3.40	.02	.15	30				
LEDE	.40	T	----	4				
CHAL	1.10	.01	.07	11				
PLSP	.10	T	----	1				
POAV	.30	T	----	3				
PERENNIAL FORBS	5.80	----	----	11	2.92	.27	.50	1.40
TRDU	.20	T	----	2				
VIVA	4.20	.02	.15	3				
*OPPO	.10	T	----	1				
ALTE	.50	T	----	1				
UNK	.90	T	----	5				
TOTAL		13.74	100.00		1338.54			642.50
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #39 - Two-Mile Hill Exc.

October 15 to April 15 = 3.67

April 15 to July 1 = 4.48

July 1 to September 1 = .49

September 1 to October 15 = 1.88

Season Total = 10.52

Long Term Average = 10.38

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Upper Govt. Draw Inside Native 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	146.50	7.33	----	11				
AGSM	19.30	.97	31.69	20	33.86	1.69	1.75	162.53
POSE	15.90	.80	26.14	18	8.37	.47	.53	40.18
KOCR	16.60	.83	27.12	11	15.97	1.45	.96	76.66
ANNUAL FORBS	2.10	----	----	10	2.00	.20	.95	9.60
LARE	.10	.01	.33	1				
DEPI	.20	.01	.33	2				
LEDE	.30	.02	.65	3				
PLPA	1.40	.07	2.29	6				
GIL	.10	.01	.33	1				
PERENNIAL FORBS	6.30	----	----	6	4.95	.83	.79	23.76
ALTE	.10	.01	.33	1				
SPCO	.10	.01	.33	1				
ERPU	1.50	.08	2.61	6				
ANRO	2.00	.10	3.27	1				
PEN	.10	.01	.33	1				
CRE	.50	.03	.98	1				
CAS	2.00	.10	3.27	1				
*PHHO	29.00	1.45	----	13				
*OPPO	2.00	.10	----	1				
*LEPU	1.10	.06	----	2				
TOTAL		3.06	100.00		65.15			312.73

*Not computed in percent composition

Precipitation Data:

R. G. #9 - Upper Govt. Draw Exc.
 October 15 to April 15 = 1.86
 April 15 to July 1 = 6.75
 July 1 to September 1 = .69
 September 1 to October 15 = 1.85
 Season Total = 11.15
 Long Term Average = 8.27

REMARKS AND OBSERVATIONS MADE FROM VESSEL'S POSITION
 (DATE, LOCATION, OBSERVATIONS, AND RESULTS OF OBSERVATIONS)

Page 1 of 1

Survey conducted by: [Name]

Plate No. 1 of 1

Station	Time	Latitude	Longitude	Depth	Temperature	Pressure	Wind	Sea	Weather	Remarks
1	08:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
2	08:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
3	08:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
4	08:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
5	09:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
6	09:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
7	09:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
8	09:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
9	10:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
10	10:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
11	10:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
12	10:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
13	11:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
14	11:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
15	11:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
16	11:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
17	12:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
18	12:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
19	12:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
20	12:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
21	13:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
22	13:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
23	13:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
24	13:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
25	14:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
26	14:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
27	14:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
28	14:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
29	15:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
30	15:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
31	15:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
32	15:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
33	16:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
34	16:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
35	16:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
36	16:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
37	17:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
38	17:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
39	17:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
40	17:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
41	18:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
42	18:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
43	18:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
44	18:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
45	19:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
46	19:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
47	19:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
48	19:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
49	20:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
50	20:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
51	20:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
52	20:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
53	21:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
54	21:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
55	21:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
56	21:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
57	22:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
58	22:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
59	22:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
60	22:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
61	23:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
62	23:15	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
63	23:30	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
64	23:45	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	
65	24:00	10° 15' N	157° 30' W	100	20.0	1010.0	10	1	Partly Cloudy	

Remarks: [Handwritten notes]

Latitude: 10° 15' N

Longitude: 157° 30' W

Depth: 100

Temperature: 20.0

Pressure: 1010.0

Wind: 10

Sea: 1

Weather: Partly Cloudy

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Upper Govt. Draw Outside Native 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	148.50	7.43	----	12				
AGSM	18.50	.93	33.21	20	31.33	1.57	1.69	150.38
POSE	25.10	1.26	45.01	19	9.59	.50	.38	46.03
KOCR	6.00	.30	10.71	5	6.46	1.29	1.08	31.01
ANNUAL								
FORBS	1.60	----	----	13	3.91	.30	2.44	18.77
PLSP	1.10	.06	2.14	11				
LEDE	.10	.01	.36	1				
LARE	.30	.02	.71	3				
DEPI	.10	.01	.36	1				
PERENNIAL								
FORBS	3.90	----	----	13	4.48	.34	1.15	21.50
ALTE	.10	.01	.36	1				
ERPU	3.10	.16	5.71	7				
SPCO	.60	.03	1.07	6				
CRE	.10	.01	.36	1				
*PHHO	16.50	.83	----	11				
*OPPO	.50	.03	----	1				
*ARHO	.30	.02	----	3				
TOTAL		2.80	100.00		55.77			267.69
*Not computed in percent composition								

Precipitation Data:

R. G. #9 - Upper Govt. Draw Exc.
 October 15 to April 15 = 1.86
 April 15 to July 1 = 6.75
 July 1 to September 1 = .69
 September 1 to October 15 = 1.85
 Season Total = 11.15
 Long Term Average = 8.27

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Upper Govt. Draw Inside Sprayed 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	11.00	.55	----	1				
AGSM	33.00	1.65	48.69	20	94.77	4.74	2.87	454.90
KOCR	6.10	.31	9.14	6	7.43	1.24	1.22	35.66
POSE	19.20	.96	28.33	18	7.32	.41	.38	35.14
BRJA	.10	.01	.29	1	.67	.67	6.70	3.22
STCO	6.00	.30	8.86	4	8.27	2.07	1.38	39.70
ANNUAL								
FORBS	1.10	----	----	6	3.80	.63	3.45	18.24
PLSP	.20	.01	.29	2				
DEPI	.40	.02	.59	4				
LEDE	.10	.01	.29	1				
LARE	.10	.01	.29	1				
PLPA	.10	.01	.29	1				
CHAL	.10	.01	.29	1				
GIL	.10	.01	.29	1				
PERENNIAL								
FORBS	1.50	----	----	2	1.39	.70	.93	6.67
ERPU	1.50	.08	2.36	2				
*PHHO	.70	.04	----	3				
TOTAL		3.39	100.00		123.65			593.53
*Not computed in percent composition								

Precipitation Data:

R. G. #9 - Upper Govt. Draw Exc.
 October 15 to April 15 = 1.86
 April 15 to July 1 = 6.75
 July 1 to September 1 = .69
 September 1 to October 15 = 1.85
 Season Total = 11.15
 Long Term Average = 8.27

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 1

No. Plots 20

Cover Determined by Area Estimate

Upper Govt. Draw Outside Sprayed 8/22/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency % Base 20	Total Weight Gms/20/ Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x 4.8
	A	B	C	E	F	G	H	I
*ARTR	2.00	.10	----	1				
AGSM	19.70	.99	30.00	20	37.41	1.87	1.90	179.57
STCO	4.50	.23	6.97	5	2.53	.51	.56	12.14
POSE	34.50	1.73	52.43	20	13.10	.66	.38	62.88
KOCR	3.60	.18	5.45	7	2.15	.31	.60	10.32
ANNUAL FORBS	1.90	----	----	11	5.41	.49	2.85	25.97
PLSP	1.10	.06	1.82	7				
LARE	.10	.01	.30	1				
DEPI	.20	.01	.30	2				
LEDE	.30	.02	.61	3				
GIL	.20	.01	.30	2				
PERENNIAL FORBS	1.10	----	----	7	1.24	.18	1.13	5.95
ERPU	1.10	.06	1.82	7				
*PHHO	5.00	.25	----	2				
TOTAL		3.30	100.00		61.84			296.83
*Not computed in percent composition								

Precipitation Data:

R. G. #9 - Upper Govt. Draw Exc.
 October 15 to April 15 = 1.86
 April 15 to July 1 = 6.75
 July 1 to September 1 = .69
 September 1 to October 15 = 1.85
 Season Total = 11.15
 Long Term Average = 8.27

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON EXCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

West Pasture Inside Native 7/6/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences F E	Wgt./ Unit Basal Area F E	Pounds Per Acre F x .48
	A	B	C	E	F	G	H	I
ARPE	86.10	.43	4.88	43	15.96	.37	.19	7.66
ATNU	1424.40	7.12	80.83	136	701.05	5.15	.49	336.50
BOGR	26.00	.13	1.48	3	17.60	5.87	.68	8.45
ORHY	63.60	.32	3.63	77	129.87	1.69	2.04	62.34
SIHY	58.00	.29	3.29	43	93.79	2.18	1.62	45.02
POSE	40.30	.20	2.27	37	10.78	.29	.27	5.17
ANNUAL FORBS	32.70	----	----	170	20.99	.12	.64	10.08
MATA	7.60	.04	.45	64				
PLPA	8.50	.04	.45	58				
LEDE	1.20	.01	.11	12				
EUSE	14.10	.07	.79	133				
LATE	1.00	.01	.11	10				
CHAL	.20	T	----	2				
GIPU	.10	T	----	1				
PERENNIAL FORBS	31.40	----	----	122	42.76	.35	1.36	20.52
MUDI	20.50	.10	1.14	69				
ALTE	10.40	.05	.57	83				
VIAM	.30	T	----	3				
AST	.20	T	----	2				
*OPPO	111.90	.56	----	32				
TOTAL		8.81	100.00		1032.80			495.74
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #13 - West Pasture Exc.

October 15 to April 15 = 1.11
 April 15 to July 1 = 5.98
 July 1 to September 1 = .42
 September 1 to October 15 = 1.65
 Season Total = 9.16
 Long Term Average = 6.98

HERBAGE AND PRECIPITATION DATA FROM WYOMING HALOGETON ENCLOSURE STUDIES
(PLOTS LOCATED SYSTEMATICALLY AND WEIGHTS ON OVEN DRY BASIS)

Plots Size 1 x 10

No. Plots 200

Cover Determined by Area Estimate

West Pasture Outside Native 7/7/67	Total Trans. Basal Area Percent	Average Percent Basal Area	Percent Compo- sition	Absolute Plot Frequency %Base 200	Total Weight Gms/200 /Sq. ft.	Average Weight Per Plot Occur- rences F ÷ E	Wgt./ Unit Basal Area F ÷ E	Pounds Per Acre F x .48
	A	B	C	E	F	G	H	I
ARPE	142.90	.71	9.85	47	25.41	.54	.18	12.20
ATNU	1092.10	5.46	75.73	139	580.62	4.18	.53	278.70
SIHY	41.40	.21	2.91	56	27.66	.49	.67	13.28
ORHY	37.50	.19	2.64	56	29.58	.53	.79	14.20
POSE	57.10	.29	4.02	42	12.48	.30	.22	5.99
SPCR	3.10	.02	.28	3	1.14	.38	.37	.55
BOGR	18.10	.09	1.25	3	6.39	2.13	.35	3.07
ANNUAL FORBS	32.60	----	----	147	90.81	.62	2.79	43.59
LATE	11.60	.06	.83	67				
PLPA	3.60	.02	.28	36				
MATA	8.40	.04	.55	68				
EUSE	7.90	.04	.55	79				
LEDE	.90	T	----	9				
CHAL	.10	T	----	1				
GIPU	.10	T	----	1				
PERENNIAL FORBS	15.00	----	----	98	23.64	.24	1.58	11.35
MUDI	11.00	.06	.83	74				
ALTE	3.80	.02	.28	38				
VIAM	.10	T	----	1				
AST	.10	T	----	1				
*OPPO	136.20	.68	----	38				
TOTAL		7.21	100.00		797.73			382.93
*Not computed in percent composition								
T - Trace								

Precipitation Data:

R. G. #13 - West Pasture Exc.

October 15 to April 15 = 1.11
 April 15 to July 1 = 5.98
 July 1 to September 1 = .42
 September 1 to October 15 = 1.65
 Season Total = 9.16
 Long Term Average = 6.98

